Logistics Management Institute

Acquisition Workforce Enhanced Incentives Test Plan

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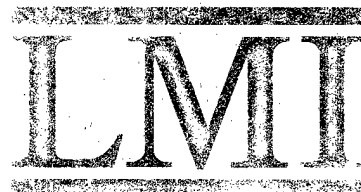
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Executive Summary

This report details the approach and key elements of conducting pilot tests to provide enhanced incentives for Department of Defense (DoD) acquisition professionals on Acquisition Category I (ACAT I) program management teams. The objective of the tests is to determine whether these incentives can contribute to program success in terms of cost, schedule, and performance.

BACKGROUND

Section 5001 (b) of the Federal Acquisition Streamlining Act (FASA) requires the Secretary of Defense to review the incentives and personnel actions available to DoD to encourage excellence in the management of defense acquisition programs, and to provide a system of enhanced incentives to facilitate the achievement of cost, schedule, and performance goals. The system is intended to relate pay to performance and to provide for consideration (in personnel evaluations and promotion decisions) of the extent to which personnel performance contributes to achieving goals established for major defense acquisition programs.

TEST DESIGN

The test of any reward system is whether it encourages behavior that improves performance and then rewards the results of that behavior. The test we have designed is intended to measure the impact of workforce incentives on program success while neutralizing the effects of other factors known to influence the acquisition program. We will compare test programs that use enhanced incentives with control programs that do not to determine whether the incentives can explain differences in program performance.

Stakeholder Findings

We conducted an extensive review of government and industry initiatives relating to performance management strategies and their effect on employee motivation and performance. We met with subject-matter experts from DoD, the Office of

Personnel Management, and the private sector, including civilian personnel specialists, military compensation mangers, senior acquisition leaders, management consulting experts, and technology integration professionals. Additionally, we surveyed nearly 1,500 acquisition professionals, including both military and civilian as well as science, engineering, technical, and administrative (SETA) support contractors in the program offices and senior acquisition students at the Industrial College of the Armed Forces and the Defense Systems Management College. The purpose of the survey was to determine which rewards are valued most, what the effectiveness of current performance management practices is, and which critical processes are within the respondents' control.

The results of this research indicate that rewards and recognition have a large potential to influence acquisition program success. If rewards are to be used successfully to motivate people and drive performance in this environment, acquisition professionals at all levels told us:

♦ The team succeeds or fails collectively, and should be rewarded collectively. Therefore, all team members should be eligible to participate in the program, including civilians, military, and SETA support contractors.

♦ Rewards should be team-based, with an opportunity for the team to recognize individuals.

♦ Rewards must be equitable, and either cash awards or savings bonds should be available to all team members.

♦ Current performance management systems lack credibility and do not drive performance. A credible performance measurement system must be established to which incentives can then be linked.

Implementation

The implementation of the test in ACAT I program offices should be accomplished in two stages. Our research has shown that a credible team-based performance management system must be in place before incentives are introduced. The survey provided evidence that existing performance appraisal systems are not a credible measure of job performance and do not effectively measure team performance.

Stage one would establish a team-based performance management system. After an extensive review of government and industry initiatives in the area of performance management strategies, we determined that the Balanced Scorecard represents the leading edge of management thinking over the past five years. The Balanced Scorecard provides a framework for communicating organizational strategy, measuring performance against clearly defined goals aligned with strategy, and linking rewards to focus behavior and drive performance. By clearly

defining desired outcomes and the drivers of those outcomes, senior managers can channel the energies, abilities, and specific knowledge of people throughout the organization toward achieving long-term goals.

Stage two would begin after the performance management system is implemented and employees and management feel comfortable with and have confidence in the strategic objectives, measures, and targets represented in their scorecard. At this point, incentives will be linked to stretch targets related to the strategic objectives. The purpose of incentives is to motivate, drive performance, and focus the entire team on the common mission and strategy-based objectives.

Measuring Response

This test design measures program success using the existing reporting system, Selected Acquisition Reports, and existing baselines from the Acquisition Program Baseline. A single-factor analysis of variance (ANOVA) model will be used to analyze the test data to determine whether there are statistical differences in the program success measures among the test programs. The primary measures of program success will be cost and schedule variances.[1] Although our analysis indicates that there has been some reductions in cost variances, programs still average 17 percent overruns after inflation and quantity change adjustments.[2]

RECOMMENDATIONS

We recommend that 16 pilot programs participate in the test to determine whether incentives can have a positive impact on program success. This is the minimum required for collecting enough data to detect statistical differences among the test programs. In stage one, all pilot programs should have successfully implemented the common performance measurement system—the Balanced Scorecard—to which incentives will be linked in stage two. The programs will be divided into four groups, each testing one of four levels of incentives. The first group will be the control group and use only existing incentives. The second group would have a fenced awards budget to test an enhanced system of nonmonetary awards linked to team performance. The third and fourth groups would, respectively, provide smaller and larger monetary awards, the larger amount testing the notion that larger rewards lead to larger performance gains.

The test period should be five years to allow time for the interventions to affect program cost, schedule, and performance outcomes and to observe the results.

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[1] Research has shown that acquisition programs usually meet their systems' technical performance objectives usually at the expense of cost or schedule variations.

[2] *The Defense System Cost Performance Database, Cost Growth Analysis Using Selected Acquisition Reports*, J.M. Jarvaise, J.A. Drezner, D. Norton, RAND, National Defense Research Institute, 1996.

Congressionally authorized personnel demonstration projects authorize five-year tests to observe changes in the workforce over time.

CONCLUSION

As a result of acquisition reform, employees are being encouraged to take responsibility for their individual growth and advancement, to perform more diverse tasks, and to be more creative when challenges arise. Innovative companies are developing programs to focus employees on their strategic objectives and motivate breakthrough improvements in such critical areas as product, process, and customer development. These programs include reengineered performance management and incentive pay plans, emphasizing the link between pay and performance.

This test satisfies FASA's requirement to provide a system of enhanced incentives to facilitate the achievement of cost, schedule, and performance goals. Using pilot programs to test the hypothesis that incentives improve the likelihood of program success, offers an opportunity to gain insight and to leverage lessons learned. The test design provides two things: evidence for determining the potential of incentives to improve performance, and a framework for implementing pay-for-performance efficiently and on a larger scale.

Contents

FIGURES

TABLES

Chapter 1
Introduction

PURPOSE

This report explains the approach to and key elements of conducting pilot tests to provide enhanced incentives for Department of Defense (DoD) acquisition professionals on Acquisition Category I (ACAT I) program management teams (PMTs).[1] The objective of the test is to determine whether these incentives can contribute to program success as measured by cost, schedule, and performance goals.

THE REQUIREMENT

Section 5001 (b) of the Federal Acquisition Streamlining Act (FASA) of 1994 requires the Secretary of Defense to review the incentives and personnel actions available to DoD to encourage excellence in the management of defense acquisition programs, and to provide a system of enhanced incentives to facilitate the achievement of cost, schedule, and performance goals. The system is intended to relate pay to performance and to provide for consideration (in personnel evaluations and promotion decisions) of the extent to which personnel performance contributes to achieving the program's cost, schedule, and performance goals.

DoD'S RESPONSE

In response to the FASA requirement, the Deputy Under Secretary of Defense for Acquisition Reform (DUSD[AR]) asked the Logistics Management Institute (LMI) to examine personnel evaluation practices and incentives currently available to the Department, and to research private industry and government best practices. LMI's initial findings were documented in an interim report that assessed the acquisition environment and identified desirable characteristics of effective incentive systems.[2]

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[1] ACAT I programs are defined by the Under Secretary of Defense for Acquisition and Technology (USD[A&T]) as those estimated to require eventual expenditure of more than $355 million (FY96 constant dollars) for research, development, test, and evaluation or more than $2.135 billion (FY96 constant dollars) for procurement, or those designated by the USD(A&T) to be ACAT I.

[2] LMI Report AQ505LN1, *Incentives for Acquisition Personnel*, Anthony Durso, Albert Schroetel, et al., November 1995.

Effective incentive systems

◆ are linked to the organization's strategic objectives,

◆ involve employees in the design to establish ownership,

◆ are open and easily understood,

◆ have clear linkage to performance (line of sight),

◆ include meaningful levels of rewards (at least 10 percent of pay),

◆ cover meaningful periods of time,

◆ are linked to credible appraisal systems,

◆ emphasize group performance but allow the team to recognize individuals,

◆ use quantitative measures whenever possible, and

◆ set achievable, yet challenging, goals.

The DUSD(AR) prepared a response to Congress which summarized the interim report and requested authority to conduct pilot tests of enhanced incentives for PMTs, including DoD civilians, military personnel, and science, engineering, technical, and administrative (SETA) contract employees in direct support of program offices. The response recommended that program savings be made available to fund performance bonuses (to facilitate and cement the relationship between program savings and improved performance) and that payment of monetary incentives include military members of the acquisition program team.[3]

OTHER CATALYSTS FOR INCENTIVES

Legislation and Policy

Congress has repeatedly expressed its desire to shift from evaluating inputs to measuring outcomes in the conduct of acquisition programs. In addition to FASA and its workforce performance enhancement provisions, the Federal Acquisition Reform (Clinger-Cohen) Act of 1996 directs the head of each executive agency to establish policies and procedures for the effective management (including accession, education, training, career development, and performance incentives) of the acquisition workforce. Model legislation has been drafted for creating performance-based organizations (PBOs) which recognizes the potential of the reward

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[3] There is no legislative proposal to date that provides the authority for monetary performance awards for the military.

system to affect performance.[4] The language gives PBOs broad discretion to design leading edge reward systems that are as aggressive as any in the private sector.[5] It builds on the 1993 Government Performance and Results Act (GPRA) goal-setting and performance measurement requirements, authorizing the creation of awards programs based on organizational, group, and individual achievements.

DoD 5000 series directives specifically address the use of creative reward systems to achieve acquisition reform initiatives. They define an acquisition environment that would balance responsibility with authority, reduce the burden of mandatory procedures and specifications, encourage prudent risk management, and reduce reporting requirements. DoD Directive 5000.1 specifies that incentives shall be applied to both government and industry to achieve the objectives of cost as an independent variable (CAIV). The directive also states that award programs (both monetary and nonmonetary) and shared-savings programs shall be used creatively to encourage cost-saving ideas for all phases of the acquisition life-cycle. Incentive programs are to target individuals and teams in both government and industry, and shall stress up-front investments to minimize production and/or operation and support costs, where applicable.[6]

The Office of Personnel Management (OPM) clearly favors an approach that links organizational performance to appraisals and rewards. Although there is no explicit statutory authority for granting awards, Title V, United States Code (U.S.C.), states that the head of an agency may *"pay a cash award to and incur necessary expense for the honorary recognition"* of an employee who makes any of several forms of contribution, and grants authority to pay individual cash awards up to $10,000 annually.[7] Additionally, Title V authorizes OPM, by regulation, to permit agencies to *"grant employees time off from duty, without loss of pay or charge to leave, as an award."*[8]

OPM recently issued guidance concerning the use of nonmonetary and cash-surrogate awards as incentives.[9] Specifically, the policy lists criteria for *honorary awards* and *informal recognition*:

- ◆ Honorary awards (formal recognition)

  - ➤ cannot convey a sense of monetary value,

  - ➤ must have lasting trophy value,

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[4] For more information, see http://www.npr.gov/initiati/21cent/index.html.

[5] "Eyes on the Prize," by Howard Risher, *Government Executive*, September 1997.

[6] DoD Directive 5000.1, part 3, paragraph 3.3.3.2, March 1996.

[7] 5 U.S.C. 4503.

[8] 5 U.S.C. 4502(e).

[9] *Using "Nonmonetary Items" as Incentive Awards; Using "Cash Surrogates" to Deliver Cash Awards;* USOPM: HRSS: OERWP: PMIAD, January 1997.

➤ should symbolize the employer-employee relationship, and

➤ must be appropriate for expenditure of public sector funds.

◆ Awards used as informal recognition must have a nominal value ($100 or less) and be appropriate for expenditure of public-sector funds.

A special case has been made for U.S. Savings Bonds. OPM considers them to be a nonmonetary item because they are a federal contract that must be purchased, and no value limit has been placed on their use.

Over the past four to five years, notable legislation and policy have recognized that pay, reward, and incentive systems should be better aligned with organizational performance. In the wake of the 1993 GPRA goal-setting and performance measurement requirements, legislation and policy are recommending broad discretion to design leading-edge reward systems.

Industry Compensation Trends

We examined industry trends and initiatives relating to reward and performance management strategies and their effect on employee motivation and performance. Generally, as a result of downsizing, re-engineering, and restructuring, traditional organizational hierarchies are disappearing, organizations are becoming flatter and reorganizing into multi-disciplined, cross-functional teams. Performance management and related compensation systems are being redesigned to recognize and reward people for what they know and how they perform, not for their place on an organizational chart—in effect, "paying people, not jobs."[10] Moreover, companies are making changes in order to link compensation more closely to business strategy and outcomes.[11]

Figure 1-1 shows how pervasive new compensation practices are.[12] This information reflects the responses of 297 compensation and human resources professionals and executives (from the United States and Canada) attending the 1996 Hay Compensation Conference.

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[10] "Paying People, Not Jobs, Reward Systems in the New Logic Corporation," Edward E. Lawler III, Ph.D., *ACA News*, May 1997.

[11] *Work in the 21st Century: Implications for Compensation*, Karen E. May, Human Resource Solutions, Orinda, CA, June 1997.

[12] Reprinted with permission from *The Hay Report, Compensation and Benefits Strategies for 1998 and Beyond*, Hay Group, Inc. 1997, p. 3-1.

Figure 1-1. Use of Innovative Compensation and Incentive Programs
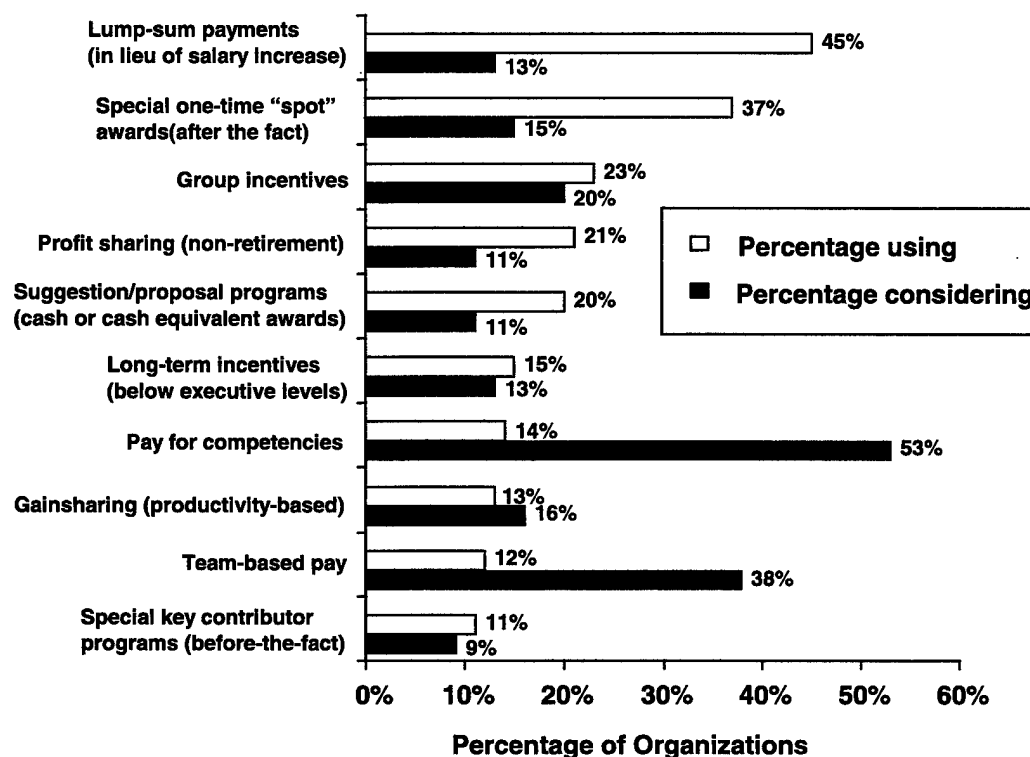
Lump-sum payments (45 percent) and one-time spot awards (37 percent) are the most commonly used compensation programs among respondents.[13] These types of incentives are not noted as strong motivators of behavior change, but they are believed to be appropriate in the right situation and with other elements introduced in the mix. More ambitious plans such as team-based pay and pay for competencies fall near the bottom of the list, however, more companies are considering these plans because they can be tailored to reinforce internal change and alter individual and group behaviors. Substantial growth is likely in these areas as companies come to rely on the development of competencies and organize more into teams.

In Figure 1-2, the order changes when the question, "Has the [compensation/innovative incentive] program helped improve performance?" is asked. Team-based pay, gainsharing, and group incentives move to the top of the list, and lump-sum payments and special one-time "spot" awards move down in value.[14] These results articulate the value of incentive strategies linked to team performance.

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[13] 1996 Hay Fall Conference Survey, *The Hay Report, Compensation and Benefits Strategies for 1998 and Beyond,* Hay Group, Inc., 1997, p. 3-1.

[14] Ibid., p. 3-3

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Figure 1-2. Performance Improvement

Has Program Helped Improve Performance?

	Yes	No	Can't Tell
Team-based pay	55%	12%	33%
Gainsharing (productivity-based)	51%	12%	37%
Group incentives	48%	17%	35%
Profit sharing (non-retirement)	44%	19%	37%
Special key contributor programs (before-the-fact)	36%	21%	43%
Special one-time "spot" awards (after-the-fact)	36%	21%	43%
Lump-sum payments (in lieu of salary increase)	28%	34%	38%
Pay for competencies	24%	5%	71%
Long-term incentives (below executive levels)	23%	17%	60%
Suggestion/proposal programs (cash or cash equivalents)	22%	41%	37%

Percentage of Organizations

☐ Yes ▨ No ■ Can't Tell

Reward and recognition programs in the private sector are being structured to support team effectiveness and to provide incentives that motivate teams to achieve common objectives. This is particularly relevant to DoD's PMT environment. Teams enable employees to collectively enhance organizational performance and achieve key objectives. Compensation practices such as performance bonuses, team-based rewards, and goalsharing support these trends.

The Changing Program Management Team Environment

In the past, the PMT environment was characterized by ambiguities and conflicts in the roles and responsibilities of program managers, burdensome oversight and review activities, and deficiencies in acquisition qualifications and training. Now, in the midst of downsizing, rightsizing, and a host of legislative changes and acquisition reform initiatives that have forced dramatic change to achieve the efficiency required by fiscal realities, Program Managers (PMs) are implementing innovative strategies to "do more with less." PMTs are committed to eliminating unnecessary regulation, delegating decision authority to the lowest possible organizational level (empowerment), using commercial-off-the-shelf (COTS) products and equipment, and implementing best commercial practices when doing so is in the best interest of the warfighter, their military service, and the government. PMs are forming partnerships with industry and paying incentives to industry in

the form of cost-plus-award-fee contracts, to encourage the development and application of cost reduction strategies and creative ways to implement them.

INTEGRATED PRODUCT TEAMS

Integrated Product Teams (IPTs) have been established to optimize design, manufacturing, and supportability processes. These multidisciplinary teams bring people from appropriate functional disciplines together to identify and resolve issues early in the process and build successful, balanced programs. They are established to enable making the right decisions at the right time and are being used successfully by industry and government program offices. DoD mandated the IPT concept to help shift from "an environment of regulation and enforcement to one of incentivized performance,... and to create a climate of reasoned, well-informed risk management by the PM's and Program Executive Officers (PEOs)."[15]

MULTIPLE HUMAN RESOURCE MANAGEMENT SYSTEMS

The PMT environment represents a unique study of team dynamics because at any one time, three distinctly different human resource management systems are at work reporting, appraising, and compensating individual performance—one each for government civilians, military, and SETA contractors. OPM provides policy for individual performance management (civilians only) but very little in terms of team-based performance management. Several ongoing personnel demonstration projects, with the authority to waive Title V provisions, are introducing performance and compensation systems designed to be more responsive and productive. However, participation is limited to civilians only, and these tests do not evaluate team performance or provide significant incentives to motivate team performance.

The 8th Quadrennial Review of Military Compensation (QRMC) concluded that the design of a [reward] system to motivate the workforce of the future would be seriously compromised if other components of the human resource management system (compensation, personnel management, and organizational design) were not taken explicitly into account and given due consideration.[16] Both academics and the QRMC research agree that the human resource systems should be designed to be responsive to strategic and organizational changes and that reward and recognition programs should be structured to support team effectiveness, drive performance, and reinforce desired behaviors.[17] Managers need to be able to use the human resource system to facilitate and reinforce the decisions they make

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[15] Remarks to the Industrial College of the Armed Forces: "The Defense Acquisition Challenge: Technological Supremacy at an Affordable Cost," Honorable Paul G. Kaminski, January 27, 1995.

[16] *Rewarding, Organizing and Managing People in the 21st Century: Time for a Strategic Approach.* Report of the 8th QRMC, June 30, 1997.

[17] "Paying People, Not Jobs, Reward Systems in the New Logic Corporation," Edward E. Lawler III, Ph.D, *ACA News*, May 1997.

about how to organize, manage, and reward people, and to select the policies and practices that target desired behaviors.

In order to motivate the workforce and achieve performance results, it is necessary to change from an entitlement culture (entitled to rewards, uninspired about earning them because they are based on equity rather than on performance) to a performance-based culture and to inspire people with the energy of knowing that the results of their accomplishments are noticed and rewarded.

RESEARCH APPROACH

ACAT I programs are subject to numerous destabilizers derived from outside the acquisition program (e.g., changing user requirements, lack of budget/funding stability, schedule or quantity changes) that have an impact on cost, schedule, and performance outcomes. To test the hypothesis that enhanced incentives will have a positive impact on program success, it was necessary that we approach the task from two perspectives:

◆ Develop a reward framework that ensures incentives are linked to factors within the control of the PMT.

◆ Design a statistical test, that controls for external destabalizers, to determine whether workforce incentives contribute to program success, as measured by cost, schedule, and performance parameters.

These two sub-tasks reinforce the foundation of our research approach, namely that incentives must have good line of sight to performance and the incentive system must relate to critical processes or outcomes that the PMT can influence. Therefore, sub-task one will develop a performance measurement framework and introduce incentives linked to factors within the PMT's control. The statistical test design, sub-task two, relies on metrics that capture organizational outcomes in terms of cost, schedule, and performance. These measures will attempt to determine whether linking incentives to performance measures that the team can control (within good line of sight) will have a positive impact on program success and allow for the comparison of test and control groups.

Figure 1-3 illustrates the operational environment in which the pilot sites will operate and which the test design must accommodate. The incentives system will be linked to processes and factors within the teams' control. The test outcomes will measure the effect on cost, schedule, and performance, which should be directly or indirectly affected by incentives. The test design must control for the effects of external factors beyond the team's control that affect cost, schedule, or performance.

Figure 1-3. Operational Environment
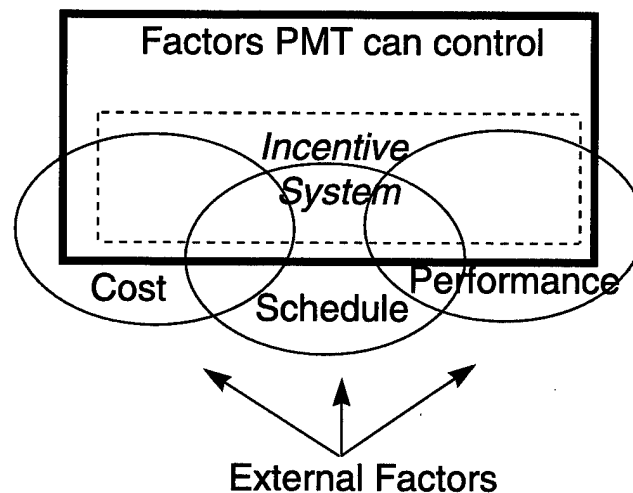
Developing the Incentive System

For the PMT environment, incentives should be structured to support team effectiveness and to motivate teams to achieve common objectives. Although workplace teams are considered one of the most sweeping management innovations of the past decade, many organizations have failed to change their compensation and reward policies to match or motivate the new team cultures. The challenge is to design a system that develops individuals, motivates the right performance, and ties rewards to the group's accomplishments. To meet this challenge, rewards must be meaningful, there must be good line of sight between what is measured and what employees can control, and rewards must be linked to a credible performance management system to reinforce desired behavior and to motivate teams to achieve desired objectives (i.e., drive performance).

Designing the Test

The test of any reward system is whether it encourages behavior that improves performance and then rewards the results of that behavior. The test we have designed will measure the impact of workforce incentives on program success while neutralizing the effects of external factors known to influence the program. Outcomes must measure the effect of incentives on program cost, schedule, and performance in an effort to capture program success. We will compare test programs that use enhanced incentives with control programs that do not to determine whether incentives can explain differences in program performance.

Chapter 2, Functional Test Description, explains how we formulated the concepts on which the test is based, describes what we will do in terms of test fundamentals, and then discusses how we will control for extraneous variables. Chapter 3, Detailed Test Design, illustrates the mechanics of measuring response and

determining the sample size (how many pilot sites should participate). Chapter 4, Implementation, presents an implementation plan in two stages: stage one to establish a team-based performance measurement system, and stage two to link incentives to stretch targets that relate to strategic objectives. A set of implementation prerequisites for each phase is outlined. These were developed on the basis of research findings, program office interviews, and the Acquisition Workforce Enhanced Incentives Survey.[18] The survey was conducted to support research and interview findings that rewards have a large potential to influence program success. The prerequisites provide the conditions necessary to proceed through the two implementation stages. The report concludes with Final Thoughts in Chapter 5.

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[18] LMI Report AQ703T1, *Acquisition Workforce Enhanced Incentive's Survey Analysis*, Philippe A. Lussier, Peggy A. Miller, Albert H. Schroetel, June 1998.

Chapter 2
Functional Test Description

OBJECTIVE

The objective of the test is to determine whether enhanced incentives can contribute to program success. The hypothesis it examines is that incentives will have a positive impact on cost, schedule, and performance.

KEY STEPS

The incentives system must relate to critical processes or outcomes that the PMT can influence. The test is structured to determine whether or not these processes or outcomes can have a positive impact on cost, schedule, and performance. The key steps in designing the test included

- ◆ establishing the baseline from which to measure the effects of incentives,

- ◆ implementing a performance measurement system,

- ◆ determining how to control for external and internal factors of non-interest known to influence program success,

- ◆ introducing enhanced incentives linked to the performance measurement system,

- ◆ identifying a statistical methodology for measuring program success,

- ◆ determining how many teams should participate in order to collect sufficient data, and

- ◆ collecting data, performing analysis, and interpreting the results.

The first four steps relate to the functional design of the test and are covered in this chapter. The remaining steps, which require an empirical foundation, are discussed in Chapter 3, Detailed Test Design.

FORMULATING TEST CONCEPTS

Integral to developing the incentive system and the corresponding test design were the inputs and insights gained from program team members and other stakeholders. Their depth of knowledge and their cooperation have been invaluable in formulating test concepts and building a knowledge base.

This study began with research of academic literature and practitioner experiences pertaining to rewards and recognition. We also extensively reviewed government and industry initiatives related to performance management strategies and their effect on employee motivation and performance. We met with subject matter experts from DoD, OPM, and the private sector, including civilian personnel specialists, military compensation managers, senior acquisition leaders, management consultants, and technology integration professionals.

We conducted interviews with PEOs, PMs, Deputy PMs, and team members at all levels in the program offices. Additionally, we conducted a survey of senior level acquisition managers and program office personnel to determine what rewards are most valued by the workforce, to identify critical program management processes and their relationship to achieving cost, schedule and performance goals, and to determine how effective current performance management practices are. Highlights of the interviews and survey results are captured in the following sections. A detailed discussion of survey results and the survey instrument can be found in Appendix A, with its Annex 1 and Annex 2.

Interview Findings

There was a high degree of interest in incentives in all of the organizations we visited. It was generally agreed that rewards and recognition have a significant potential to influence program success. There is not always a good line of sight, however, to aggregate measures of program performance such as cost, schedule, and technical performance. Program managers acknowledged that the Acquisition Program Baseline (APB), which captures the program's key cost, schedule, and performance parameters, is their "contract with the government," but most team members agreed that the metrics used to measure team and program performance do not reflect the program's critical aspects.

If rewards are to be used successfully to motivate people and drive performance in this environment, program team members at all levels told us the following:

◆ The team succeeds or fails collectively, and should be rewarded collectively.

◆ All team members should be eligible to participate in the rewards program, including civilians, military, and SETA support contractors.

◆ Rewards should be team-based, with an opportunity for the team to recognize individuals.

◆ Either cash awards or savings bonds must be available to all team members (as a stimulus for the shift to a performance-based culture).

◆ Rewards must be equitable.

◆ A credible performance management system (to link incentives to) must be established.

Survey Results

The survey helped us to quantify what rewards are valued by the workforce and to determine whether enhanced incentives can contribute to program success. It was important for us to analyze the feasibility of using program cost, schedule, and performance goals to evaluate acquisition personnel performance. The survey provided empirical evidence to support interview findings that rewards have a large potential to influence program success, and that an incentive program linked to a credible performance measurement system could provide a model for change in the acquisition program environment. The survey indicated the following:

◆ Current performance management systems lack credibility.

◆ Team performance is managed less effectively than individual performance.

◆ External factors have a large influence on program success.

◆ Both civilians and military place a high value on monetary awards.

We asked participants to what extent they personally valued various rewards, to determine what types of rewards would provide the greatest motivational value. Table 2-1 presents the overall results, ranked from highest to lowest value.

Results revealed that base pay increases, cash awards, and outstanding performance ratings were invariably ranked the top three, while productivity upgrades, administrative support (considered enablers and not rewards), and gift certificates ranked consistently as the bottom three.

Table 2-1. Rewards, Ranked by Mean Value

Rank	Reward
1	Base pay increase
2	Cash award
3	Outstanding rating
4	Paid time off
5	Savings bonds
6	Education & training
7	Assignment preference
8	Flexible work hours & place
9	Influence in goal setting
10	Assignment of high-status tasks
11	Informal recognition
12	Formal recognition
13	Tuition refunds
14	Unused leave sell-back
15	Productivity upgrades
16	Administrative support
17	Gift certificates

TEST FUNDAMENTALS

This section describes the fundamentals of conducting the acquisition workforce enhanced incentives test. The test must consider several key questions:

◆ What types of culture and organizational strategies should the incentives system support?

◆ Can enhanced incentives improve the likelihood of program success?

◆ How much can program success be influenced by incentives for government program office personnel?

◆ Can larger incentives result in higher performance?

◆ What types of incentives (monetary or nonmonetary) will work best in this environment?

◆ How can the incentives system be implemented without significant increases in reporting and administrative requirements?

The test will incorporate key aspects of classical test design, modified for practicality and real-world considerations. The first step is establishing a baseline from which to measure the effect of the incentives. Second, since stakeholders told us that current appraisal systems are not appropriate for linking incentives to performance, implementing a credible, team-based performance measurement system to which incentives can be linked is essential. Third, because time will have elapsed while the performance measurement system is being established and the system itself will introduce some change, the baseline will have to be reestablished before incentives can be introduced. The fourth step is to introduce incentives designed to drive performance in support of the objectives established for the performance measurement system. The last step is collecting the data and assessing the results.

The pilot incentive programs will be continuously evaluated and the incentives systems adjusted accordingly. By experimenting and incrementally gaining experience, lessons-learned and successful practices can be leveraged to expand the program efficiently and wisely.

Establishing the Baseline

Baseline data will be collected for test and control groups before the test is initiated. The data collection efforts will rely heavily on information already assimilated by major defense acquisition programs. Measurements will be taken of the variables that we expect incentives to affect. Those variables in aggregate, will reflect some measure of program success and include the program's cost, schedule, and performance characteristics. The APB will be used to baseline the program and to capture program measures for cost, schedule, and performance. The methodology for calculating these measures is discussed further in the Measuring Response section of Chapter 3.

In addition to operational outcomes such as cost, schedule, and performance, it is our hypothesis that incentives used properly will affect individual and team morale, motivation, and job satisfaction, in turn leading to improved performance[1]. These behavioral outcomes are hard to capture or quantify, but they will reflect how well organizational strategy and desired outcomes are communicated, and whether employees sense leadership commitment to reform initiatives. To capture these effects, a climate survey will be conducted prior to test initiation and periodically thereafter to determine if improvements have been made in terms of job satisfaction and motivation. The survey used for the stakeholder involvement portion of this study (included in Annex 1 of Appendix A) will be modified to focus more specifically on individual and team performance.

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[1] "Profit Sharing and Productivity," Martin L. Weitzman and Douglas L. Kruse, *Paying for Productivity, A Look at the Evidence*, Alan S. Blinder, Editor; Section 3, p. 139.

Implementing the Performance Measurement System

Our research has shown that before incentives are introduced, a credible team-based performance measurement system must be implemented. The survey provided evidence that existing performance appraisal systems are not a credible measure of job performance and do not effectively measure team performance.

After an extensive review of government and industry initiatives with regard to performance management strategies, we have determined that the balanced score-card (Figure 2-1) represents the leading edge of management thinking over the past five years. The Gartner Group estimates that 40 percent of Fortune 1000 Companies will implement a new management system—the Balanced Score-card—by the year 2000.

The Balanced Scorecard is a performance measurement system that provides organizations a framework for translating mission and strategy into objectives and measures, as shown in Figure 2-1.[2] It is organized across four balanced perspectives: *financial*, *customer*, *internal business processes*, and *learning and growth*. By clearly defining the outcomes an organization desires and the drivers of those outcomes, senior managers can channel the energies, abilities, and specific knowledge of people throughout the organization toward achieving the long-term goals.

Figure 2-1. The Balanced Scorecard
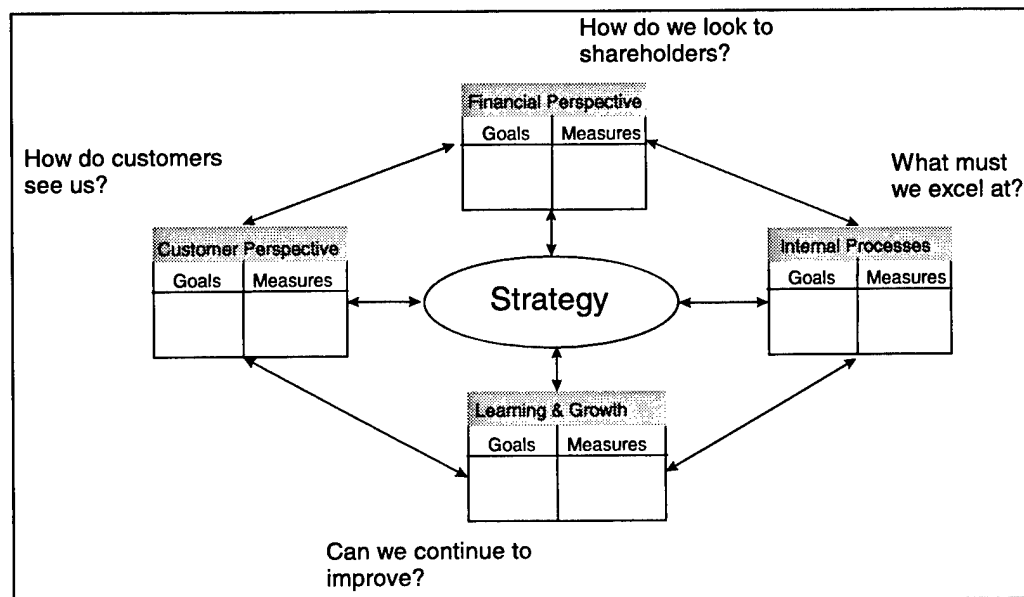
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[2] "The Balanced Scorecard—Measures that Drive Performance," Robert S. Kaplan and David P. Norton, *Harvard Business Review*, January-February 1992.

The Balanced Scorecard is already being widely used as a strategic management system.[3] Mobil Oil's U.S. Marketing & Refining Division (USM&R) developed its scorecard during 1994 to link the entire organization (18 business units and 14 service units) and drive alignment from top to bottom. Each business and service unit now has a scorecard aligned to the division scorecard (and thus its strategy) through a carefully chosen core of objectives and measures. Since 1993, Mobil Oil (USM&R) has gone from number seven in profitability in the oil industry to number one for an unprecedented three consecutive years. It attributes this turn-around to the scorecard.[4]

CIGNA Property and Casualty (P&C) developed its first balanced scorecard to create a new vision for itself as an underwriting specialist. But once CIGNA started using it, the scorecard allowed the chief executive officer (CEO) and the senior management team not only to introduce a new strategy for the organization, but to overhaul the company's entire management system. The CEO was able to transform the company so that everyone could focus on achieving long-term strategic objectives. Since 1993, the company has gone from $275 million in the red to over $100 million in profit, and its stock price has risen from $62 to $172 per share.[5]

Both the U.S. Department of Transportation and the U.S. Department of the Treasury have utilized a balanced scorecard to reengineer the federal procurement oversight process. Instead of reviewing contract files for compliance, these agencies use a results-oriented, performance measurement process that focuses on customer satisfaction, employee empowerment, and management assessments and emphasizes prevention rather than detection. Their cross-agency effort to reduce costs and improve results won them the International Benchmarking Clearing-house (IBC) Gold Award in Applied Research and the Vice Presidential Hammer Award.[6] These agencies are considered a benchmark in terms of compliance with GPRA.

The Information Technology Management Reform Act requires the federal agencies, which spend over $25 billion annually on information technology (IT) products and services, to measure the contribution of their IT investments to their

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[3] "Using the Balanced Scorecard as a Strategic Management System," Robert S. Kaplan and David P. Norton, *Harvard Business Review*, January-February 1996.

[4] Mr. Edward T. Lewis, Jr., Supervisor, Strategic Planning, U.S. Marketing & Refining Division, Mobil Oil Corporation.

[5] Thomas M. Valerio, Senior Vice President, Transformation Officer, CIGNA P&C.

[6] IBC is a service of the American Productivity and Quality Center (APQC). IBC was designed to help managers find and adopt best practices. Clearinghouse members include hundreds of companies, government agencies, healthcare providers, and educational institutions. For more information, see www.apqc.org.

mission results.[7] The General Services Administration used a balanced scorecard to develop and use IT performance measures.

Further information regarding the Balanced Scorecard can be found in Appendix B. How the scorecard will be implemented in the program management offices is covered in Chapter 4.

Reestablishing the Baseline

It is our hypothesis that a new performance measurement system will have its own measurable impact on achieving cost, schedule and performance goals established for major defense acquisition programs. Therefore, before incentives are introduced, the baseline must be reestablished. The process of implementing the balanced scorecard and observing the strategic measures to determine whether they are capturing and communicating the proper relationships will take approximately 9 to 12 months. At the end of this period, when employees and management have confidence that the system is communicating and measuring performance as intended, a new baseline will be established. The APB and the climate survey will be the source material for establishing baseline response measures. These measures are covered in detail in Chapter 3.

Introducing Incentives

As senior managers continue to realize the need to align employees with the goals of the organization, they are discovering that goal-setting and training are insufficient in and of themselves. What is needed is a system that aligns the reward strategy with the goals of the organization and in doing so, aligns the employees with the organization.[8]

An incentive system should reward performance on the basis of measures within the team's control. Those processes that have the greatest effect on program success and that are least influenced by external factors become the best candidates for linking performance measures and rewards.

A rewards program in which pay is linked to the key elements of the scorecard provides a way to reinforce team efforts to support the achievement of strategic program objectives. Incentives, particularly monetary, will change employee behavior, and it is important that the measures be used accurately to reflect desired outcomes and that process relationships are understood. Employees and management should feel comfortable with, and have confidence in, the objectives, measures, and targets represented in the scorecard. The organization must be

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[7] Patrick T. Plunkett, Program Manager for Information Technology Performance Measurement, General Services Administration.

[8] *Designing and Managing an Organization-Wide Incentive Pay System*, William B. Abernathy, Ph.D, Abernathy and Associates.

confident that the behaviors produced by incentives will support their strategic objectives.

Assessing the Results

We anticipate that the incentives will take some time to measurably change a program's bottom line in terms of cost, schedule, and performance. In practice, personnel demonstration projects are authorized by legislation for five-year periods, since interventions that change the personnel management system require time for observing the effect on organizational outcomes.

In many cases, strategic measures that employees may have a good line of sight to and that will be reflected in the scorecard will have an indirect relationship with cost, schedule, and performance. For example, a Defense Reform Initiative goal is to decrease paper transactions by 50 percent through the use of electronic commerce/data interchange. While achieving this objective may be worthy of an incentive for reaching some stretch goal (provided there is a good measure of "paper" transactions), it would take some time to observe any resultant effect on program success.

Not all program offices that implement the scorecard will initially participate in enhanced incentives, particularly the authority to pay cash awards. A set of program offices will be reserved as control groups, with no enhancement to the current incentive system, to determine whether statistical evidence supports the hypothesis that enhanced incentives can have a positive impact on program success. Results will be assessed using measures from the APB and a climate survey.

CONTROLLING FOR EXTRANEOUS VARIABLES

The effect of extraneous variables must be controlled for in order to isolate the effects of the factor of interest, incentives. Expected outcomes will be measured in terms of cost, schedule, and technical performance. If a large enough number of test and control groups could be selected, the variables of non-interest would equally affect the outcomes of both groups and in fact would be controlled for by randomness, or the law of averages. The section titled Determining Sample Size, in Chapter 3, provides the statistical rationale for choosing the number of test and control groups to participate in the test.

In experimental design, extraneous variables are controlled by blocking the experimental units.[9] "Blocking" refers to sorting the experimental units, in this case program offices, into homogeneous groups. The treatment (incentives) is then assigned at random within the blocks. In order to apply this technique in the PMT

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[9] "Randomized Block Designs," John Neter and William Wasserman, *Applied Linear Statistical Models*, 1974, p. 722.

environment, we must consider two sets of extraneous variables: internal and external.

Internal Factors

Internal factors are those that characterize the acquisition program itself. A RAND study demonstrated that program size (in terms of cost), maturity, phase, weapon system type, military service, and management complexity are the most significant internal influences on cost growth.[10] Of these, program size, maturity, and phase had the greatest impact on cost growth. For example, small programs have higher cost growth, possibly as a result of proportionally higher research and development costs that exhibit higher cost variances through engineering, manufacturing, and development (EMD) or production. Older programs or programs with longer life-cycles on average reflect higher cost growth as problems accumulate over time. Development cost growth is higher than production cost growth because of the technical difficulties reflected in research, development, test, and evaluation (RDT&E) costs.

Extraneous factors that are internal and are characterized by program demographics will be controlled for by selecting control groups of similar size, phase, and weapon system type to each test group. In this manner, the blocking technique described above can be applied.

External Factors

External factors are derived from outside the acquisition program but have an impact on program cost, schedule, and performance outcome. Examples of external factors include

- ◆ changing user requirements;

- ◆ program funding;

- ◆ the Planning, Programming, and Budgeting System;

- ◆ Congress; and

- ◆ the Office of the Secretary of Defense.

External factors will be controlled for using an arbiter process. The arbiter will determine when cost, schedule, or performance variance is the result of an external influence. A variance attributed to an external factor will be discounted before the outcome for both test and control groups is measured. The arbiter could be at

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[10] *An Analysis of Weapon System Cost Growth*, Drezner et al., RAND-Project Air Force, 1993.

the PEO, Component Acquisition Executive (CAE), or Overarching Integrated Product Team level.

An example of an external influence that would be accounted for by the arbiter process is a quantity change. Quantity changes may result from the authorization and appropriation process or changing user requirements. In these cases, as determined by an arbiter, costs incurred as a result of the change in programmed quantity would be used to adjust current cost estimates. For quantity changes determined to be due to external influences, the current cost estimate would be adjusted to reflect the program as still procuring the baseline quantity. In some cases, quantity reductions result from cost overruns, and decisions to reduce quantity are made to keep the program within budget. Since such quantity changes are not the result of external influences, they should not be discounted.

SUMMARY

Stakeholder input indicates that current appraisal systems lack credibility and do not support team-based performance management. With regard to reward and recognition, both military and civilian respondents consistently placed higher value on monetary rewards than on nonmonetary rewards. The balanced scorecard was found to be an effective strategic management tool used by both the private and public sectors.

The test will consist of establishing the baseline, implementing the performance management system, reestablishing the baseline, introducing the incentives, controlling for extraneous variables, and assessing the results.

The following chapter provides details on how program success will be measured, states how many program offices should participate and why, and concludes with test recommendations.

Chapter 3
Detailed Test Design

MEASURING RESPONSE

DoD directives require every acquisition program to establish goals for the minimum number of cost, schedule, and performance parameters that describe the program.[1] Each parameter includes both an objective and a threshold value. Threshold values are individually set for each program on the basis of its characteristics (e.g., maturity, risk, etc.). If the threshold values are not specified, the threshold value for performance will be equal to the objective value. The threshold value for schedule will be the objective value plus six months. The threshold value for cost will be the objective value plus 10 percent. Program objective and threshold values for cost, schedule, and performance are captured in the APB.

Test outcomes will measure the effects of the intervention (incentives) on program success. Outcomes for test programs will be compared to outcomes for control programs to determine whether enhanced incentives can explain the differences in program performance. Outcomes for both the test and control groups will primarily measure cost and schedule variances from the APB. Performance breaches will be recorded in both test and control groups, however, there is usually insufficient variance in technical performance parameters to expect that the response due to the introduction of enhanced incentives would be measurable. Research has shown that acquisition programs usually meet their systems' technical performance objectives.[2] It is recommended that no payment of bonuses be made, regardless of other cost or schedule measures, unless the program is meeting or has met all of the key performance parameter thresholds in the APB.

The Acquisition Program Baseline

The APB is used to baseline the program and to capture program measures for cost, schedule, and performance. We intend to avoid introducing new reporting requirements for the purpose of conducting the incentives test. The APB is recognized as the Program Manager's contract with decision authorities. APB deviations are reported annually unless a program is in breach, in which case quarterly reporting can be mandated. ACAT IA programs report APB deviations in quarterly major automated information system (MAIS) reports to the decision

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[1] DoD 5000.2-R.

[2] *An Analysis of Weapon System Cost Growth,* Drezner et al., RAND-Project Air Force, 1993.

authority.[3] MAIS reports are not currently required by statute and are not usually sent to Congress. ACAT IC/D[4] programs report APB deviations to Congress in the form of Selected Acquisition Reports (SARs). The SARs are a mechanism for recording and tracking program cost, schedule, and performance variations. We will use the information already captured in the SARs for the purpose of this incentives test.

Table 3-1 is a generic SAR planning matrix. Within a phase or baseline, three sets of numbers or dates are tracked with respect to cost, schedule, and performance. When a program first enters a phase, the values in all three columns are the same. The original *Planning Estimate* (column one) remains the same throughout the phase. A submission to revise the APB as a result of cost breach or schedule deviation results in adjustments to the *Approved Program* (column two). The *Current Estimate* (column three) is updated as the phase progresses. Response measures for the enhanced incentive test will use the *Current Estimate* as a baseline for both the test and control groups. This baseline will be established when the test begins, and all measurements will be taken from it.

Table 3-1. SAR Planning Matrix

Item tracked	Planning estimate	Approved program	Current estimate
Cost:			
Development (RDT&E)			
Procurement			
Construction (MILCON)			
Operations & maintenance (O&M)			
Total base year cost:			
Escalation			
Schedule:			
Milestone I			
Milestone II			
Development contract award			
Low rate initial production award			
Full rate production award			

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[3] ACAT IA programs are MAIS programs defined by the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence (ASD[C3I]) as requiring program costs in any single year in excess of $30 million (FY96 constant dollars) or total life-cycle costs in excess of $360 million (FY96 constant dollars), or those designated by the ASD(C3I) to be ACAT IA.

[4] The ACAT IC program decision authority is the CAE. The "C" refers to Component. The ACAT ID program decision authority is the USD(A&T). The "D" refers to the Defense Acquisition Board, which advises the USD(A&T) at major decision points.

Table 3-1. SAR Planning Matrix (Continued)

Item tracked	Planning estimate	Approved program	Current estimate
Development, test & evaluation start/finish First delivery Operational, test, & evaluation start/finish Milestone III Initial operational capability Full operational capability			

Cost Variance

Cost variance (CV) will be tracked in four major categories: RDT&E, procurement, construction (MILCON), and O&M, and in total for both test and control groups. By tracking the component CVs in the four major categories and in the aggregate, variations (either up or down) that can be attributed to incentives may be discovered. Because it is conceivable that increased RDT&E costs may result in lower production costs to yield a net program cost reduction, the primary measure will be total costs.

CV will be expressed as a ratio of actual costs to planned costs for each test and control group, as computed in Equation 3-1:

$$CV = \frac{actual\ costs}{planned\ costs}. \qquad \text{[Eq. 3-1]}$$

Values of CV less than 1 represent programs whose actual expenditures are below planned levels. Table 3-2 summarizes the data necessary to compute the CVs for the enhanced incentives test. All of the required data are recorded in the SARs.

Table 3-2. Cost Variance Data Requirements

Cost category	Planned costs (test baseline)	Actual costs (current estimate)	Cost variance (CV)
RDT&E Procurement MILCON O&M			
Total			

Schedule Variance

Schedule variance (SV) will be measured in a manner similar to CV. Current estimates for milestones that appear in the APB will be captured for test and control groups when the test is initiated. For these groups, a baseline phase duration (in months) for the current and remaining phases of the program will be calculated as time between the initiating and terminating phase milestones.

SV will be expressed as the ratio of current (actual) to planned duration, as in Equation 3-2. Current and remaining phase duration estimates will be calculated. Other significant milestones, such as low rate initial production or contract award dates that appear in the APB or the SARs, will also be used to measure SV.

$$SV = \frac{current\ phase\ duration(months)}{planned\ phase\ duration(months)}. \qquad \text{[Eq. 3-2]}$$

Values of SV less than 1 represent programs that are progressing faster than planned in achieving schedule milestones. All data used to measure SV can be found in the SARs.

Expected Results

In terms of the response measures CV and SV, our hypothesis is that programs using the enhanced incentives system will have lower cost and schedule variance than those not using the enhanced incentive system. This is illustrated in Figure 3-1.

Figure 3-1. Notional Example of Expected Cost and Schedule Variance
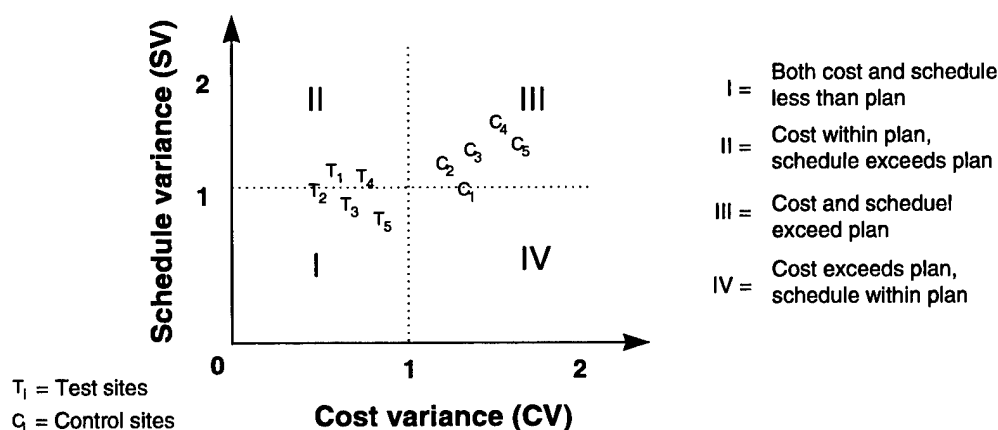
This chart presents notional results for 10 program offices at the end of a one-year measurement period. Test sites T_1 through T_5 are using the enhanced incentives system, while control sites C_1 through C_5 are not. The plot is characterized by four quadrants. Quadrant I represents those programs in which actual cost and schedule

are less than planned. Quadrant II shows those programs in which cost is less than planned but the schedule is exceeded. Quadrant III depicts those programs in which both cost and schedule exceed baseline plans. Finally, quadrant IV indicates those programs in which baseline cost estimates are exceeded but schedule is less than planned (i.e., within schedule).

In this notional example, the test sites with lower CV and SV are clustered. The challenge is to collect enough sample data, while controlling for extraneous variables, to provide statistical evidence that incentives can have a positive impact on our measures for program success (CV and SV).

DETERMINING SAMPLE SIZE

In order to determine how many pilot sites should participate in the enhanced incentives test, four important elements should be considered:

◆ Historical variation in the response measure.

◆ The number of factors or factor levels that will be tested.

◆ The analytical framework.

◆ The amount of risk we are able to accept or afford.

Each of these elements is discussed in detail in the following sections.

Historical Variance of the Response Measure

For the purpose of the test, we will look at the effect of incentives in terms of the two response variables, CV and SV. Performance variances will not be used because research has shown that acquisition programs usually meet their performance objectives. The question becomes—at what cost and with what regard to schedule?

Program cost and schedule variances have been the subject of numerous studies and analyses over the past several years. Since more cost data were readily available, we sized the sample on the basis of available cost data only, using the Defense System Cost Performance Database (DSCPD) to estimate the expected variance for the response measure CV. Comparable schedule data were not readily available.

The expected variance in our response measure is a key parameter needed to determine how much data we must collect and thus how many pilot sites must participate in the test. The more our response measure varies (even prior to the introduction of incentives), the more difficult it will be to detect statistical differences attributable to incentives.

RAND's DSCPD compiled actual and planned costs from ACAT I program SARs from 1969 to 1991.[5] A program typically has three different SAR baselines over its life-cycle: planning, development, and production. Planning estimates have not always been included in the SARs. It is only in the past five years that a planning baseline submittal has been required in the SARs. Most programs, particularly older ones from the 1960s and 1970s, have only development estimates. Table 3-3 shows the distribution of CV estimates in the DSCPD.

Table 3-3. Distribution of CV
Estimates by Baseline

Baseline	Number
Planning estimate	37
Development estimate	150
Production estimate	88
Total	275

The cost data in the DSCPD are adjusted for changes in inflation and quantity changes, because most analysts feel that unanticipated inflation and quantity changes are largely beyond the program manager's control. For each baseline, we calculated the CV, standard deviation, and a 95 percent confidence interval in order to determine how much variation we might expect in our response measure. The results are presented in Table 3-4.

Table 3-4. Cost Variance, All Programs (1969-1991)

Baseline	Average CV	Standard deviation	95% confidence interval
Planning	1.2	0.48	0.81 to 1.59
Development	1.3	0.42	1.09 to 1.51
Production	1.04	0.17	1.00 to 1.08
Total	1.2	0.39	1.06 to 1.34

These results indicate that CVs have averaged 1.2, 1.3, and 1.04 respectively for planning, development, and production baselines from 1969 to 1991. Said another way, historical costs have exceeded planned costs by 20 percent, 30 percent, and 4 percent respectively for each baseline. The standard deviation measures how widely dispersed the data are from the sample mean. The larger the standard deviation, the more dispersed the data lie about the mean, and the wider the confidence interval usually becomes. The more dispersed the data collected are

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[5] *The Defense System Cost Performance Database, Cost Growth Analysis Using Selected Acquisition Reports,* J.M. Jarvaise, J.A. Drezner, D. Norton, RAND, National Defense Research Institute, 1996.

expected to be, the more difficult it will be to detect and attribute changes in the response measure (CV) to the intervention (incentives).

Table 3-4 also shows that on average, total costs are expected to exceed planned costs by 20 percent even after adjusting for quantity and inflation changes. We can state with 95 percent confidence that cost overruns will be somewhere between 6 percent and 34 percent.

Because the DSCPD dates from 1969, these results include programs that have been long completed or terminated. We wondered whether there might be some reduction in the variance if we looked only at currently active programs. The result of this analysis indicates that there has been some reduction in CV since 1969. In total, the average CV dropped from 1.20 to 1.17, and the standard deviation dropped for each baseline. These results were encouraging. The reduced total standard deviation of 0.31 will be the measure used to determine the required number of pilot sites for the incentives test. Table 3-5 summarizes the results of this analysis.

Table 3-5. Cost Variance, Active Programs (DSCPD) Only

Baseline	Number	Average CV	Standard deviation	95% confidence interval
Planning	29	1.2	0.38	0.77 to 1.65
Development	73	1.24	0.35	1.04 to 1.44
Production	51	1.05	0.16	1.01 to 1.09
Total	153	1.17	0.31	0.99 to 1.35

It is important to note that there may exist even further reductions in CV since 1991. The numerous acquisition reform initiatives, including the Defense Acquisition Workforce Improvement Act, that have been enacted since that time may have had the synergistic effect of reducing program CV. Because the DCPDS did not include the CV estimates for programs since 1991, this could not be corroborated, however, it would be valuable to study changes in CV since 1991. Further reductions in CV would increase the probability that the effects of enhanced incentives on program success as measured by CV can be detected within the context of this test.

Factor Levels

Another important element in determining the number of pilot sites necessary to run the test is how many factor levels should be tested. The test design considers only one factor of interest—incentives. At a minimum, at least two factor levels are needed to conduct the test: enhanced incentives, and no incentives (no enhancements to the current system). In general, the more levels of the factor of

interest (incentives) to be analyzed and distinguished between, the more test participants will be required.

Additional factor levels of interest in this environment are monetary and non-monetary incentives. One test group will use nonmonetary incentives only. Factor levels within the monetary incentives category include whether or not the test should attempt to distinguish between varying levels of monetary incentives in an effort to determine whether larger performance incentives lead to larger performance gains or increase the probability of program success.

In effect, the decision can be made within the analytical framework upon which the test is built. The decision of how many factor levels to test is also influenced by affordability and risk. These issues are discussed in the next two sections.

Analytical Framework

Analysis of the test data will follow a typical single-factor analysis of variance (ANOVA) model. This will be accomplished in two steps:

- ◆ Determine whether or not the factor-level means are the same.

- ◆ If they are not the same, examine how they differ and what the implications of the differences are.

In statistical terms we can describe the test in terms of two hypotheses: the null hypothesis, which we denote as H_0 and the alternative hypothesis, which we denote as H_a. There are two sets of these hypotheses, one relating to CV and the other to SV.

For each incentive level that we will test, we calculate the average CV and SV for pilot programs operating at that incentive level. We will denote these averages as ACV and ASV. Accordingly, ACV_1 represents the average CV for all programs operating at incentive level one, while ASV_1 represents the average SV for all programs operating at incentive level one.

With these definitions, the following sets of hypotheses can be formulated:

(1)   <u>Cost</u>

H_0: $ACV_1 = ACV_2 = \ldots = ACV_j$

H_a: Not all ACV_i are equal

Where j equals the number of incentive levels we wish to test.

The null hypothesis states that regardless of incentives, CVs are the same. The alternative hypothesis states that average CV is influenced by incentives.

(2)   Schedule

H_0: $ASV_1 = ASV_2 = \ldots = ASV_j$

H_a: Not all ASV_i are equal

Where j equals the number of incentive levels we wish to test.

The null hypothesis states that regardless of incentives, SVs are the same. The alternative hypothesis states that average SV is influenced by incentives.

It is important analytically to test both sets of hypotheses. With this formulation, we may be able to determine whether incentives can affect one aspect of program success (either cost savings or meeting schedule milestones) more so than the other.

The general hypothesis that incentives can have a positive impact on program success can be substantiated only if we collect enough statistical evidence to allow us to reject H_0 for either the cost or schedule formulation. If this is the case, step two will provide for pair-wise comparison of the factor averages to determine whether the presence of enhanced incentives provides lower averages for either of the response measures CV and SV.

Risk Assessment

In general, the more data we are able to collect, the better our chances of detecting smaller differences between test and control sites. The primary risk in this environment is not having enough samples from which to draw valid statistical conclusions. Several factors contribute to the assessment of risk. The most important is how much we expect the response variables to be affected by the factor levels. In other words, the larger the impact incentives have on cost and schedule measures, the better our chances of drawing valid statistical conclusions and the fewer samples we will need to detect the differences.

Another factor is how much statistical error we are willing to accept. Two types of errors are associated with hypothesis testing: Type I errors, called alpha (α) errors, and Type II errors, known as beta (β) errors. Type I errors represent the probability that H_0 is rejected when H_0 is true. Type II errors represent the probability that H_0 is accepted when H_0 is false. The following section on sample size brings these factors together in a decision framework.

Sample Size

A sample represents a program management office participating in the test. Our sample size analysis used two assumed levels of influence that incentives may have on the response measure (CV), 10 percent and 20 percent. We also used

typical α and β error levels of .05 and .20 respectively to determine the sample size requirements. For analysis of variance problems, it is important to plan the sample size so that needed protection against Type I and Type II errors can be obtained.[6]

Figure 3-2 summarizes the sample size requirements for various test designs; two-level, three-level, four-level, and five-level. Each row represents alternative combinations for testing the single factor of interest—incentives—at the corresponding number of levels. For example, at the two-factor level, the test may compare the affects of no incentives against nonmonetary incentives or compare nonmonetary incentives against a $6,000 incentive, etc. Sample requirements are listed per factor level and total for each design, relying on Power Function Charts.[7] The 10 percent and 20 percent columns represent assumptions made regarding how much impact incentives will have on CV. If incentives reduce our response measure (CV) by 20 percent, then we need 16 pilot programs to test incentives across four levels to be able to detect statistical differences. The needed sample size increases exponentially if the expected impact is only 10 percent. Under this assumption, 72 pilot programs would be needed in order to draw valid statistical conclusions.

The rationale for choosing the factor levels of $6,000, $10,000, and $25,000 for monetary incentives is:

◆ $6,000 represents approximately 10 percent of the average salary of a member of a program office staff. Supporting research indicates that 10 percent is the minimum reward level that will influence performance.

◆ $10,000 represents the maximum amount an agency can award without higher approval.

◆ $25,000 represents the maximum award for government employees authorized by OPM policy.

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[6] "Implementation of ANOVA Model," John Neter and William Wasserman, *Applied Linear Statistical Models*, 1974, Chapter 15, p. 492.

[7] "Power Function Charts for Specifying Numbers of Observations in Analyses of Variance of Fixed Effects," *The Annals of Mathematical Statistics*, 1958, Volume 29, pp. 871-877.

Figure 3-2. Sample Size Requirements

Test design	Factor levels					Mean difference detected*			
	No incentives	Enhanced non-monetary	$6K	$10K	$25K	10%		20%	
						Samples per level	Samples total	Samples per level	Samples total
2-Level	X	X				26	52	6	12
	X		X						
	X			X					
	X				X				
3-Level	X	X	X			22	66	5	15
	X	X		X					
	X	X			X				
	X		X	X					
	X		X		X				
	X			X	X				
4-Level	X	X	X	X		18	72	4	16
	X	X	X		X				
	X		X	X	X				
	X	X		X	X				
5-Level	X	X	X	X	X	16	80	4	20

TEST RECOMMENDATIONS

We recommend that 16 pilot programs participate in the test. This number of programs will facilitate the testing of four factor (incentive) levels and is the minimum required for collecting enough data to detect statistical differences among the test programs. Even with 16 pilot sites participating, incentives must impact cost variances by 20 percent for the test to detect and attribute the effect to incentives.

All pilot programs should have successfully implemented the common performance measurement system—the Balanced Scorecard—to which incentives will be linked. The programs will be divided into four groups, each testing one of four levels of incentives. The first level would be the control group and use only existing incentives. The second level would have a fenced awards budget to test an enhanced system of nonmonetary awards linked to team performance. The third and fourth levels would provide smaller and larger monetary awards, the larger amount testing the notion that larger rewards lead to larger performance gains.

The test period should be five years, to allow time for the interventions to affect program cost, schedule, and performance outcomes and to observe the results.

Chapter 4
Implementation

The test in program offices should be implemented in two stages. First, a team-based performance measurement system will be installed, providing the framework for translating mission and strategy into objectives and measures. By clearly defining desired outcomes and the drivers of those outcomes, senior managers can channel the energies, abilities, and specific knowledge of people throughout the organization toward achieving the long-term goals. Second, incentives will be linked to stretch targets related to the strategic objectives. The purpose of incentives is to motivate, drive performance, and focus the entire team on common mission and strategy-based objectives.

A set of implementation prerequisites for each phase has been developed on the basis of research findings, program office interviews, and the enhanced incentives survey. The prerequisites provide the conditions necessary for proceeding through the two implementation stages. Without the presence of these conditions, it is unlikely that the implementation will be successful.

STAGE ONE—IMPLEMENTING THE PERFORMANCE MEASUREMENT SYSTEM

Stage One Prerequisites

For the balanced scorecard to be effective, it must reflect the strategic vision of the senior executive group. Merely slapping performance measures onto existing processes may drive local improvement, but it is unlikely to lead to breakthrough performance for an entire organization.[1] If senior executives are not leading the process, they will continue to conduct operational reviews emphasizing short-term targets, bypassing and undermining the fundamental rationale for developing a scorecard in the first place. It is through the involvement and observed actions of leadership that employees sense commitment, urgency, and authenticity with respect to reform initiatives.

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[1] *The Balanced Scorecard, Translating Strategy into Action*, Robert S. Kaplan and David P. Norton, Harvard Business School Press, 1996.

The prerequisites to stage one are that leadership at all levels must be fully engaged and leadership at the corporate level must

◆ agree on desired outcomes,

◆ clarify and translate the vision and strategy,

◆ communicate and link strategic objectives and measures, and

◆ link incentives to stretch targets related to the strategic objectives.

Implementing the Balanced Scorecard

The balanced scorecard provides a framework for communicating organizational strategy, measuring performance against clearly defined goals aligned with strategy, and linking rewards to focus behavior and drive performance. Appendix B provides a detailed description of the balanced scorecard. This section describes an implementation plan for installing the scorecard in a single business unit or program office.

Implementation is a four-step process: defining the organizational structure, building consensus around strategic objectives, selecting and designing the measures of performance, and building the implementation plan. Each step is broken down into a set of subtasks.[2]

DEFINING THE ORGANIZATIONAL STRUCTURE

The corporate and business unit structure for DoD's weapon (or software) system procurement process must first be established. The first two tasks will ensure that a consensus regarding organizational relationships is achieved.

Task 1: Select the Appropriate Organizational Unit

The scorecard process works best at organizational levels that have their own customers, resources, products, distribution, and production (e.g., an acquisition program office).

Corporate-level scorecards ensure that higher level strategy and objectives drive the performance at the business unit or program management team level. The diversity of DoD's acquisition "corporation" increases the difficulty of constructing corporate-level scorecards. However, the corporate-level scorecard must be constructed first to ensure that the corporate and business unit strategies are aligned.

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[2] This section draws heavily on research done by Robert S. Kaplan and David P. Norton and documented in their book *The Balanced Scorecard, Translating Strategy into Action*, Harvard Business School Press, 1996, Appendix A, p. 294.

The corporate scorecard may consist of some strategy vectors and a core set of measurement criteria.

Task 2: Identify Corporate, Division, and Business Unit Linkages

DoD's acquisition "corporation" is a complex structure of various managing entities including USD(A&T) staff, CAEs, Component Material and System Commands, PEOs, PMTs, and IPTs. These entities must be identified and aligned in an organizational structure such as the one shown in Figure 4-1.

Figure 4-1. Notional Acquisition Organizational Structure
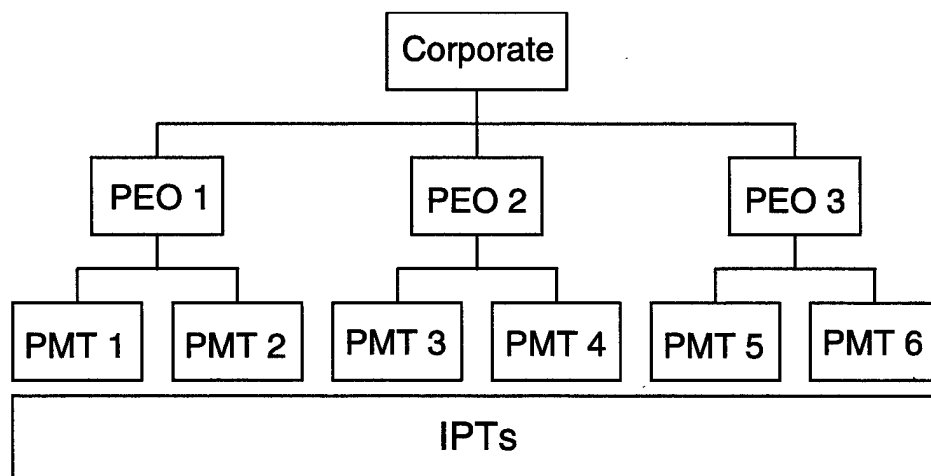
It is necessary to understand the relationships between these entities and then determine at what levels, and to what degree, scorecards should be implemented. For example, corporate-level scorecards may contain only the key strategy vectors, with a minimal measurement framework. PEOs may be aligned with the corporate level or may constitute the first level to which detail is added in the four management perspectives: financial, customer, internal processes, and learning and growth. Interviews with key corporate, PEO, and PMT managers will help define the organizational relationships.

Leadership at the corporate and program office level should establish a project leader and design team led by a senior staff manager who

◆ owns and maintains the framework, philosophy, and methodology for design and development; and

◆ guides the process, schedules interviews and meetings, synthesizes inputs, and provides documentation, background reading, and data to the project team.

BUILDING CONSENSUS AROUND STRATEGIC OBJECTIVES

Task 3: Conduct First Round of Interviews

During the first round of interviews, the objectives are to introduce the concept of the balanced scorecard to senior managers; begin the process of having top management think about translating strategy and objectives into tangible, operational measures; learn about concerns that individuals may have about developing and implementing the scorecard; and identify potential conflicts in strategy or organizational functions.

The project leader prepares and supplies background scorecard material and program-specific documents on the vision, mission, and strategy to each of the senior managers who will be involved (usually 6 to 12). Interviews of 60 to 90 minutes are conducted to get inputs on strategic objectives and tentative proposals on measures across the four balanced scorecard perspectives.

Task 4: Synthesis Session

After the interviews are completed, the design team meets to discuss the proposed strategic objectives and measures. The outcome of the synthesis session is an initial ranking of objectives in each perspective. These will be used as a basis for the first executive workshop.

Task 5: Executive Workshop (Round One)

The senior management group, with the assistance of a facilitator knowledgeable in the balanced scorecard development process, debates mission and strategy until a consensus is reached. Each individual then asks, "If I succeed with my vision and strategy, how will my performance differ for customers, internal business processes, and our ability to grow and improve?" Each objective and measure is addressed sequentially for each perspective. After all have been discussed, a vote is taken to determine the top 3 or 4 candidates. If time permits, additional measures may be brainstormed. The workshop concludes by dividing the executive team into four subgroups for the next task, one subgroup for each perspective. A lead for each subgroup is chosen. Subgroups should expand to 4 to 6 persons each and include key functional personnel from the next subordinate level of management.

SELECTING AND DESIGNING THE MEASURES

Task 6: Subgroup Meetings

The challenge in choosing specific scorecard measures is to select those that best communicate what the strategy is intended to accomplish. During this task, the

project lead works with the individual subgroups over the course of several meetings to

◆ refine strategic objectives;

◆ for each objective, identify measures that best capture and communicate the intent;

◆ for each measure, identify sources of information and action needed; and

◆ for each perspective, identify the influences and linkages between measures.

The facilitator may be used along with the project lead to begin to identify the framework for the four perspectives. Linkages between measures (both within and across perspectives) that describe the cause-and-effect relationship are identified.

Task 7: Executive Workshop (Round Two)

During this workshop, the senior management team, direct subordinates, and a large number of key middle managers are involved to achieve buy-in. Output from the subgroups is briefed by the executive leads to build ownership. Comments on measures are taken. The output of this session is a consensus on stretch goals and targets for each measure, a draft implementation plan, and vehicles (e.g., brochures, Web page) for communicating the balanced scorecard to employees.

BUILDING THE IMPLEMENTATION PLAN

Task 8: Develop the Implementation Plan

A new team of leaders from the subgroups formalizes the stretch targets. The implementation plan includes how the measures are to be linked to database and information systems in order to communicate the balanced scorecard throughout the organization.

Task 9: Executive Workshop (Round Three)

A final consensus on the vision, objectives, and measures is reached. Stretch targets are validated. An action plan detailing initiatives for achieving stretch targets is constructed.

Task 10: Finalize the Implementation Plan

An implementation plan is finalized for communicating the scorecard to employees, integrating the balanced scorecard into management philosophy, and developing a supporting information system. Program offices should begin executing

the implementation plan and using the scorecard as soon as possible with the best available information and let the systems catch up with the process.

STAGE TWO—LINKING INCENTIVES

Stage Two Prerequisites

Prerequisites for stage two are specific to implementing incentives in the major defense acquisition program environment. Stage two should not be initiated until stage one has been completed. Incentives, particularly monetary, are designed to focus and change behavior, and it is important that the measures capture desired outcomes and that process relationships be understood. Employees and management should feel comfortable with and have confidence in the strategic objectives, measures, and targets represented in the scorecard. In other words, managers should feel reasonably certain that the performance behavior motivated by the incentives supports the strategic objectives and is the desired behavior.

The prerequisites to stage two are:

◆ A team-based performance measurement system is in place (from stage one).

◆ A trial period to ensure that strategic measures capture desired outcomes properly (6 to 12 months) is completed and credibility has been established.

◆ An approved incentive plan that includes the employee participation conditions is approved.

◆ All team members—including civilians, military, and SETA contractors—are eligible to participate in the incentive program.

◆ Either cash awards or savings bonds are available to all team members, to provide the stimulus needed to shift to a performance-based culture.

◆ Rewards are equitable.

Introducing the Incentives

The test of any reward system is whether it produces behaviors that improve performance and rewards the *results* those behaviors support. Recent studies have focused on the design and integration of team performance management practices (goal setting, appraising, developing, and rewarding) in order to better support business performance. Teams enable employees to collectively enhance organizational performance and achieve key objectives. However, teams are not likely to be effective if an organization fails to back them up with a well designed performance

management system. For teams and individuals to succeed in attaining their objectives, organizations and employees need a clear idea of the results they are trying to achieve. A credible performance management system should communicate organizational strategy, measure performance against goals aligned with strategy, and link rewards to focus behavior and drive performance.

COMMUNICATE STRATEGY

Traditional performance management systems commonly suffer from several shortcomings:

◆ Goal setting is not linked to strategy.

◆ Line employees do not understand strategic priorities.

◆ Few employees receive meaningful feedback.

◆ Incentives and rewards are not linked to goals and objectives.[3]

Even private-industry survey evidence, as shown in Figure 4-2, indicates that linkage between strategy and critical performance levers is generally ineffective.[4] According to *CFO Magazine*, only 40 percent of mid-level managers and 3 percent of line employees understand the strategic vision; personal goal setting is aligned more with the annual budget process than with organizational strategy; and incentives and compensation are linked, not with strategy, but with the annual budget process.

Figure 4-2. Private-Industry Views of the Linkage Between
Strategy and Critical Performance Levers

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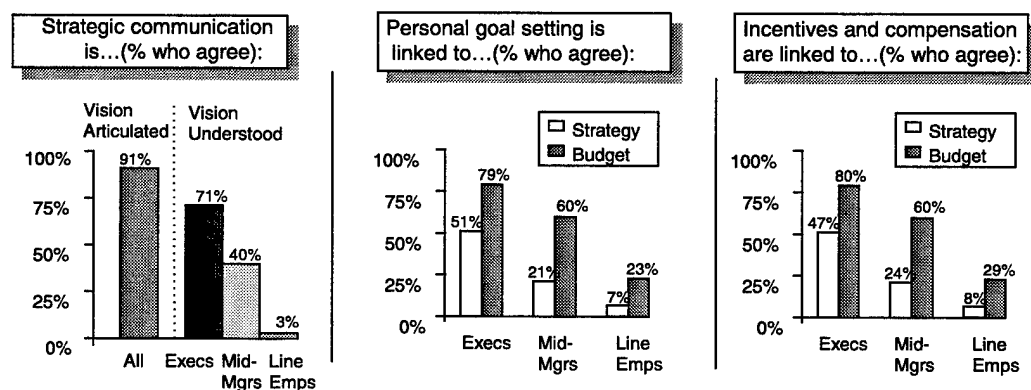
[3] *The Strategy Focused Workforce*, a presentation for the International Productivity and Quality Center Balanced Scorecard Conference by Mario Bognanno, Renaissance Solutions, Inc., June 1997.

[4] *CFO Magazine*, Renaissance Solutions, Inc.

Communication serves to signal to all employees the critical objectives that must be accomplished if an organization's strategy is to succeed. Once all employees understand high-level objectives and measures, they can establish individual objectives that support the business unit's global strategy. At the conclusion of the communication and linkage process, everyone in the organization should understand the long-term goals, as well as the strategy for achieving them. Individuals will have formulated local actions that will contribute to achieving business unit objectives, and all organizational efforts and initiatives will be aligned to the needed change processes.

MEASURE PERFORMANCE

According to the American Compensation Association (ACA), performance management and incentive design in a team environment have been evolving in American industry since 1935.[5] Three generations of development are identified:

- ◆ First Generation (Gainsharing)

  - ➤ Measures financial cost

  - ➤ Based on historical standards

  - ➤ Indefinite term

  - ➤ Focuses on the "shop floor"

  - ➤ Examples: Scanlon and Rucker Plans.

The first generation is exemplified by the Scanlon Plan (1935), probably the best known of the gainsharing plans and considered the oldest.[6] Joseph Scanlon, president of a United Steelworkers Union local, approached the president of Empire Steel and Tinplate Company (Mansfield, Ohio) with a plan. The gainsharing plan he proposed related labor costs to sales value of production, using a predetermined formula. Any gains achieved, through either increased sales or reduced labor costs, would be shared by the company and its employees.

- ◆ Second Generation (Productivity Gainsharing)

  - ➤ Measures standard hours

  - ➤ Based on historical standards

  - ➤ Indefinite term

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[5] "Perspectives in Compensation and Benefits," *ACA Journal*, Winter 1995, Volume 4, Number 4, p. 66.

[6] *Gain Sharing, The New Path to Profits and Productivity*, John G. Belcher, 1991, p. 60.

> ➤ Focuses on the shop floor

> ➤ Examples: Improved Productivity Through Sharing (IMPROSHARE).

The second generation is represented by IMPROSHARE. Developed by industrial engineer Mitchell Fein in the mid-1970s, IMPROSHARE uses labor standards to determine standard hours for a given level of production units.[7] While typically used in manufacturing, IMPROSHARE has been adapted to service industries as well. The standard hours are compared to actual hours to determine whether productivity gains have been achieved. Gains are then shared between the company and its employees.

♦ Third Generation (Goalsharing)

> ➤ Measures broad business goals

> ➤ Based on future-oriented goals

> ➤ Definite term

> ➤ Focuses on many groups of employees

> ➤ Examples: goalsharing, business plans, incentive models.

The typical example of third-generation development comes from Corning Inc., which has been implementing goalsharing since 1990. Corning's plan has four defining features:

♦ It is based on performance at the unit level.

♦ It focuses on long-term goals.

♦ It requires continuous improvement in performance.

♦ It is simple.

From the employees' perspective, rewards have been significant, averaging 9 percent between 1990 and 1993 and 13 percent in 1994—for most, the equivalent of an extra month's pay. From the company's perspective, the 1994 savings-to-cost ratio of 4.93 means that Corning saved nearly five times what it paid out, significantly higher than other gainsharing programs.[8]

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[7] Ibid., p. 50.

[8] *Strategic Use of Goalsharing at Corning,* ACA, Winter 1995.

Corning's path to success drew heavily on ACA-sponsored research detailing the experience of 46 organizations using alternative reward systems. Corning's experience reinforces the major findings of that research:

◆ Develop a clear vision of the organization's strategy and culture.

◆ Track programs for success.

◆ Let people make a difference.

◆ Have a sunset period for measures and targets.

◆ Allow for decentralization, but check that incentive plans conform with corporate-wide principles.

◆ Separate the incentive from base pay.

◆ Keep the program flexible.

◆ Break down barriers between employees and between units.

◆ Simplify the system.

◆ Celebrate results.

Goalsharing as described by this example is an applicable incentive strategy for the acquisition program offices. The Balanced Scorecard provides a framework of strategy-based goals and objectives that can be shared by the team, and to which incentives can be linked. The system that propelled Mobil Oil to number one in the industry is an example of a goalsharing system. The following section provides a notional example of a goalsharing system set in the acquisition environment.

GOALSHARING FOR THE ACQUISITION ENVIRONMENT—A NOTIONAL EXAMPLE

Let's suppose that in order to create a strategic vision for the acquisition community, senior leadership has agreed on five corporate strategic goals and has then developed a set of measurable objectives to support them:

◆ Strategic goal 1: Aggressively implement acquisition reform initiatives.

➤ Increase use of commercial practices and distribution systems.

➤ More competitive sourcing of in-house work.

➤ Expand use of COTS products.

➤ Reduce cycle times.

◆ Strategic goal 2: Expand partnership with commercial industry.

➤ Integrate civilian and military research and development to create advanced products and common technology bases.

➤ Use flexible manufacturing to produce low-volume, defense-unique items on the same production lines as high-volume, commercial items.

➤ Remove barriers to partnership (e.g., burdensome government cost accounting and auditing systems); accommodate the need for long-term contractual relationships.

◆ Strategic goal 3: Shift resources from infrastructure and support to modernization and combat.

➤ Reduce support costs.

➤ Capture commercial technology, both product and process.

➤ Focus on inherently governmental capabilities: warfighting, policy, management, oversight; for all other activities, use competitive sources.

◆ Strategic goal 4: Re-engineer the DoD logistics systems.

➤ Use advanced information systems and rapid transportation.

➤ Achieve visibility of material assets.

➤ Reduce order-to-receipt time.

◆ Strategic goal 5: Improve training and education of the acquisition workforce.

The objectives that support the strategic themes strike a balance along the four perspectives of the balanced scorecard, as shown in Figure 4-3. For example, in a typical program office, the customers may include prime contractors, system users, the Office of the Secretary of Defense, and/or Congress. Strategic objectives in the customer perspective may include removing barriers to industry partnership, achieving system performance objectives, and achieving schedule milestones. Each of these objectives is designed to create value for a specific customer. Other objectives capture the strategic themes across the balance of the remaining perspectives.

Figure 4-3. Notional Balanced Scorecard Example

Perspective	Strategic objectives	Strategic measures	Targets
Customer	Remove barriers to partnership Achieve system performance objectives (vs. threshold) Achieve schedule milestones	• Average term of contracts • Annual contract audits • Weight/speed/capacity objectives • Contract Delivery Requirements completed, EMD contract award, initial operational test & evaluation completed	+ 12 months - 10% Obj per APB - 12 months
Internal business processes	Capture commercial technology Integrate R&D facilities Reduce cycle times Achieve asset visiblity Competitively outsource in-house work	• % product req. filled by COTS • % of integration plan achieved • Months from concept to initial operational capability • Average order-to-receipt time • % of material assets tracked in system • $ value of work outsourced • Full-time equivalents per capita	+10% 50% - 24 months - 6 months 90% +10% - 1
Learning & growth	Develop strategic skills & competencies Utilize advanced information systems Improve employee satisfaction	• % of employee education & training plan completed • # days training per employee per year • % of technology upgrade plan completed • Climate survey satisfaction level • Employee turnover rates	50% - 20 days - 6 months 90% +10% - 10%
Financial	Reduce support costs Reduce per-unit costs Reduce program opeating costs	• Actual/planned O&M costs • Program acquisition unit costs • Average procurement unit costs • Operating costs per employee	.9 - 10% - 10% - 10%

Strategic measures for each objective must measure performance outcomes to provide focus for the organization. When aligned properly, customer objectives and measures will drive internal business processes needed to support the customers. These internal processes then determine the requirement for employee learning and growth and for information systems innovation. Finally, these value chains affect the bottom line in terms of the financial measures.

THE INCENTIVE PLAN

Each program office will be required to draft an incentive plan for approval. The incentive plan should be drafted during stage one and refined during the trial period when the scorecards are in place and the strategic measures are being observed, prior initiating stage two. The incentive plan must include consideration of organizational levels; employee participation; the relative importance of each perspective, based on program maturity; the relative importance of each measure within each perspective, based on program dynamics; pay-outs; frequency of awards; and performance ranges for each measure.

The performance range for each measure may include low, average, and high performance targets, or thresholds and objectives. Best-in-class benchmarking could be incorporated, if applicable, to help to set high-end performance ranges. Operating initiatives and action plans should be drafted to achieve high-end performance ranges. Scales within each performance range can determine pay-outs for each performance level.

A weighting system can be used to weight performance at each organizational level, the relative importance of each perspective, and measures within each perspective. The system of weights and measures would be reviewed on an annual

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basis to ensure that the proper emphasis and strategy are being communicated through the performance measurement system. Action plans and operating initiatives should be reviewed and revised accordingly.

To accommodate personal tastes and facilitate the incorporation of nonmonetary awards, the incentive program may result in shares or points being awarded to the team on the basis of the weights, performance ranges, and performance outcomes. The shares may be redeemed by individuals from a menu of awards that may include paid time off, flexible schedules, education and training, travel opportunities, cash awards, savings bonds, gift certificates, hardware/software upgrades, special assignments, etc.

EMPLOYEE PARTICIPATION

An important part of the incentive plan is employee participation and eligibility. This portion of the plan must cover who is and is not eligible, how to define the team, transitioning in and out of the program office, and training on the plan.

Each PMT will develop a plan tailored to represent its organization, the matrix support, and the program's personnel policies. At a minimum, the following sections should be included in the plan:

- Defining the team.

- Who is eligible to participate, including pro-rated participation?

- How people become ineligible (e.g., less than satisfactory performance during rating period)?

- Transitioning in and out of the program office.

SUMMARY

The implementation of the incentives test should be accomplished in two stages. First, the team-based performance measurement system should be installed. Second, incentives can be linked to the performance measures. Leadership at all levels must be fully engaged to ensure success.

A balanced scorecard enables the organization to align its management processes and focus the entire team on implementing the strategy. It helps achieve consistency of vision and action as the organization changes direction and introduces new strategies and processes. The scorecard provides a framework for managing the implementation of strategy while allowing the strategy itself to evolve in response to changes in the political and technological environments.[9] Operating

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[9] "Using the Balanced Scorecard As a Strategic Management System," Robert S. Kaplan and David P. Norton, *Harvard Business Review*, January-February 1996.

initiatives and plans are made for achieving stretch goals. An incentive plan is designed to motivate the workforce and reward behaviors that support the strategic objectives.

An incentive plan should include the following, at a minimum:

- Employee participation and training.

- Performance targets and ranges.

- Operating initiatives and an action plan for goal achievement.

- A weighting system for organization levels, the relative importance of each perspective, and the measures within each perspective.

- Pay-out allocations and frequency.

Chapter 5
Final Thoughts

"That which gets rewarded, gets repeated."[1]

Most organizations today operate in a turbulent environment with complex strategies that, though valid when they were launched, may lose their validity as business conditions change. After having implemented a variety of change programs, each with its own champions and gurus, and each competing for senior leadership's time, energy, and resources, managers are finding it increasingly difficult to integrate these diverse initiatives to achieve strategic goals—a situation that leads to frequent disappointment with program results. While restructuring has produced some dramatic one-time economic gains, successful organizations have realized that fundamental strategic choices about rewarding, organizing, and managing people affect organizational performance,[2] and they are growing the organization's capability to continuously fine-tune strategies and activities to accommodate ever-changing business conditions.

Virtually all efforts at process reengineering and technological implementation will fail if organizations lose sight of the critical part played by the people who must fill the redefined roles, within the reengineered processes, in less time and with fewer resources. Unless work is organized properly, roles are clearly defined, and people are properly focused and motivated, reengineering efforts and investments in new technology are unlikely to produce desired results or lead to competitive advantage.

In the old environment, multi-paged job descriptions and endless lists of unique job titles confined employees to "growing their jobs" by increasing their budgets and the number of employees reporting to them.[3] Individuals with bigger jobs get higher pay, regardless of their skills and their performance, motivating people to develop skills that help them move up the hierarchy rather than those that may be critical to the organization's success because they enhance key organizational capabilities and core competencies. In the new environment, performance and incentive pay plans are focusing on rewarding individuals for increasing their skills and competencies so they can add more value to their organizations.

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[1] Herbert W. Zagarow, Ph.D., Chairman of the Board, Quality Alert Institute, New York. Formerly Vice President of the Deming Methods Consultant Group, Dr. Zagarow has over 20 years of experience in strategic planning, performance measurement, and statistical process control.

[2] *Rewarding, Organizing and Managing People in the 21st Century: Time for a Strategic Approach.* Report of the 8th QRMC, June 30, 1997.

[3] *From the Ground Up: Six Principles for Building the New Logic Corporation,* Edward E. Lawler III, Ph.D., copyright 1996, Jossey-Bass Inc., Publishers.

Research done by Barry Macy of Texas Tech University[4] shows that increases in productivity of 30 to 40 percent are fully possible with an integrated work management strategy. Macy's research confirms that significant performance gains come when workers are engaged and have opportunities to grow and use their full capabilities. This situation requires a plan that wins their support and commitment. Something must give them a reason to embrace change.

That something is usually money.[5] Even draft legislation for creating PBOs recognizes the reward system's potential to affect performance. As noted in Chapter 1, the language gives PBOs broad discretion to design leading edge reward systems that are as aggressive as any in the private sector. It builds on the 1993 GPRA goal-setting and performance measurement requirements, authorizing the creation of awards programs recognizing organizational, group, and individual achievements.

Personnel Demonstration projects at the Defense, Commerce, and Veterans Affairs (VA) Departments reflect the understanding that the federal pay system needs to be modified in the context of reform initiatives to improve performance. The VA pay experiment pays incentives (linked to a balanced scorecard) to stimulate improved customer service. In 1997, the New York VA regional office reported that the average time to process a claim had been reduced from 264 days to 130 days and that average backlog had been cut from 25,000 to 12,000 claims.

But augmenting the current federal pay system on the basis of performance improvement is a sensitive and potentially disruptive process that needs to be carefully planned, anticipating the reactions of all the stakeholders.[6] Employees' acceptance of a new system depends on their perception of management and its handling of the current program as well as their sense of how they will fare under the new program.

Leaders frequently talk about the importance to their organization of individuals and teams taking ownership of the processes and needed improvement (empowerment). At the same time, however, their actions send clear messages about the hazards of risk-taking, as they strip power from those who take risks that do not pay off. The ability of an organization to react, to be quick and flexible during tumultuous times, can hinge on its ability to truly empower its workforce. Plans for any new program should include a proactive strategy for selling employees on the need for change and the rationale for the new program.

As a result of acquisition reform, employees are being encouraged to take responsibility for their individual growth and advancement, to perform more diverse tasks, and to be more creative when challenges arise. Innovative companies are developing

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[4] "Eyes on the Prize," by Howard Risher, *Government Executive*, September 1997.

[5] "Eyes on the Prize," by Howard Risher, *Government Executive*, September 1997.

[6] Ibid., p. 79.

programs to focus employees on their strategic objectives in order to motivate break-through improvements in such critical areas as product, process, and customer development. These programs include reengineered performance management and incentive pay plans that emphasize the link between pay and performance.

Implementing enhanced incentives, or pay for performance, in a limited number of acquisition programs offers a unique opportunity to adapt and test an effective industry strategy of linking incentive pay to organizational performance. To fully leverage the power of this approach, DoD should make every effort to obtain authority to provide performance-based incentive pay to all members of the integrated product teams participating in the test, including; military, civilians, and SETA support contractors. By truly managing and rewarding the team as a collective and entrepreneurial entity, breakthrough performance gains and achievements can be realized.

The test described in this plan also satisfies FASA's requirement to provide a system of enhanced incentives to facilitate the achievement of cost, schedule, and performance goals. Using pilot programs to test the hypothesis that enhanced incentives will improve the likelihood of program success allows the opportunity to gain insight and to leverage lessons learned. The test design provides two things: evidence for determining the potential of enhanced incentives to improve performance, and a framework for implementing pay for performance efficiently and on a larger scale.

Appendix A
Stakeholder Input

SURVEY RESULTS

The Acquisition Workforce Enhanced Incentive Survey was distributed to nearly 1,500 military members, civilian personnel, and science, engineering, technical, and administrative (SETA) support contractors in Army, Navy, Air Force, and joint program offices, and to senior acquisition students at the Industrial College of the Armed Forces and the Defense Systems Management College. The respondents were 31 percent military, 55 percent civilian, and 14 percent SETA contractors. Approximately two-thirds of those surveyed were working in ACAT I program offices and one-third were students.[1]

The survey had three main objectives: to determine what rewards are valued most, to determine the credibility and effectiveness of current performance management practices (communicating goals and objectives, performance measurement, and the use of rewards and recognition), and to get stakeholder input to the test and incentives system design. The results are organized into three sections:

◆ Rewards and recognition

◆ Individual and team performance

◆ Critical processes.

Rewards and Recognition

Reward systems are communication systems that should reinforce and support the kinds of behavior that improve performance. The purpose of this section of the survey was to determine the perceived value of current reward and recognition systems and to solicit preferences regarding the characteristics of a new system. The survey results showed the following:[2]

◆ 74 percent of the respondents agreed that rewards and recognition have a large potential for influencing program success (73 percent civilian, 78 percent military).

◆ 74 percent favored monetary awards over nonmonetary awards (78 percent civilian, 66 percent military).

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[1] Figure A-2-1 and Table A-2-1, in Annex 2, Detailed Survey Results.
[2] Figure A-2-2 and Table A-2-2, in Annex 2, Detailed Survey Results.

◆ Only 19 percent believed that current appraisal systems are credible and should be used to determine rewards (21 percent civilians, 16 percent military).

◆ 79 percent agreed that for awards given on the basis of team performance, no team members should be excluded (73 percent civilian, 87 percent military).

◆ 76 percent agreed that awards must be equitable for all team members, including military members and SETA contractors (74 percent civilian, 79 percent military).

To determine what types of rewards would provide the highest motivational value, we also asked participants to what extent they personally valued various rewards. Consistently, base pay increases, cash awards, and outstanding performance ratings were the top three, while productivity upgrades, administrative support (considered enablers and not rewards), and gift certificates were the bottom three. Table A-1 presents the overall results, ranked from highest to lowest value.

Table A-1. Rewards, Ranked by Mean
Value of Response

Rank	Reward
1	Base pay increase
2	Cash award
3	Outstanding rating
4	Paid time off
5	Savings bonds
6	Education & training
7	Assignment preference
8	Flexible work hours & place
9	Influence in goal setting
10	Assignment of high-status tasks
11	Informal recognition
12	Formal recognition
13	Tuition refunds
14	Unused leave sell-back
15	Productivity upgrades
16	Administrative support
17	Gift certificates

Individual and Team Performance

The purpose of the performance section of our survey was to evaluate the effectiveness of current performance management practices and to determine whether

existing metrics are appropriate for measuring or tracking individual and team performance. Survey evidence revealed that current performance management practices lack credibility and fail to drive performance or motivate.[3]

Although it was collectively (91 percent) agreed that individual performance has a direct impact on the team's performance and contributes to program success, the survey results indicated a substantial lack of confidence in individual appraisal systems:

◆ Only 18 percent of the respondents believed that current appraisals drive performance and motivate employees to perform well.

◆ Only 34 percent agreed that performance appraisals are a fair and accurate reflection of individual performance.

◆ Less than half (43 percent) agreed that performance appraisals take into account the most important aspects of the job.

Many private sector companies have realized that process-focused, multifunctional teams dramatically improve the way they deliver products and services to customers. Our survey indicated that 72 percent of respondents agreed that team performance is more important than individual performance in influencing program success. However, team-based performance management is a new paradigm for federal program offices. There is no policy guidance from the Office of Personnel Management on team performance metrics or appraisals. During interviews, program team members indicated that since their teams are collectively held responsible for success or failure, they should be rewarded collectively. The survey results showed that:

◆ less than half of the respondents (47 percent) agreed that organizational strategy or team goals are clearly communicated to the team,

◆ only 33 percent believed that team performance is measured against clearly defined goals,

◆ only 29 percent agreed that the metrics used to measure team performance reflect critical aspects of the program, and

◆ only 31 percent agreed that team performance measures drive performance and motivate the team to perform well.[4]

Survey evidence suggests that team performance is managed even less effectively than individual performance, as shown in Table A-2.

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[3] Figure A-2-7 and Table A-2-3, in Annex 2, Detailed Survey Results.

[4] Figure A-2-10 and Table A-2-4, in Annex 2, Detailed Survey Results.

Table A-2. Respondents' Views of Team vs. Individual Performance Management

Statement	Team performance management (agree)	Individual performance management (agree)
Measures reflect critical aspects of jobs	29 percent	43 percent
Appraisals and metrics are fair and objective	24 percent	35 percent
Organizational strategy is clearly communicated	47 percent	53 percent
Objectives and goals are clearly communicated	48 percent	46 percent

Critical Processes

An incentive system should reward performance on the basis of measures within a team's span of control. Those processes that have the greatest effect on program success and are least influenced by external factors become the best candidates for performance measures and for linking rewards to performance.

In interviews with program offices prior to constructing the survey, we compiled a list of processes and events that occur at various stages of the acquisition life-cycle. We asked the survey respondents to rate the extent to which each process has an impact on achieving program cost, schedule, and technical performance goals. Figure A-1 reflects the processes, from most to least significant impact.

Figure A-1. Respondents' Views of the Impact of Critical Processes on Program Success

Question: To what extent do these processes have an impact on acquisition success in terms of cost, schedule, and performance?

Significant to large extent	Moderate extent	Small to none

Secure Funding
Stabilize Resources
Customer Satisfaction
Schedule, Budget, Performance
Test & Evaluation
Cost/Performance Tradeoffs
Determine Acquisition Strategy
Risk Assessment
Source Selection
Develop Product Definition
Progress/Design Reviews
Tech Interchange Meetings
Timely/Accurate Reporting
Build Procurement Plans
Contract Negotiations
Determine Contract Deliverables
Define Award Fee Program

In an attempt to isolate those processes that are specific to the government pro-
gram management team, we asked which team—government or prime
contractor—has the greater impact on the successful outcome of these processes.
Only four items were identified as being primarily under the control of the gov-
ernment program team: *secure funding*, *determine acquisition strategy*, *source
selection*, and *build procurement plans*. Other processes were scored as influenced
equally by both government and prime contractors.

External Factors

It is generally agreed that some external factors—e.g., budget/funding instability
and schedule or quantity changes—can have a great effect on whether acquisition
programs achieve their cost, schedule, and performance goals. In order to deter-
mine whether or not enhanced incentives can contribute to program success, we
must be able to discount the effects of such factors, either mathematically or
through an arbiter process to control for them in a test environment.

We tried to ascertain how much control the program office has over various ex-
ternal factors that may significantly affect program success. Figure A-2 summa-
rizes the results.

Figure A-2. Respondents' Views of Program Office's Control over External Influences
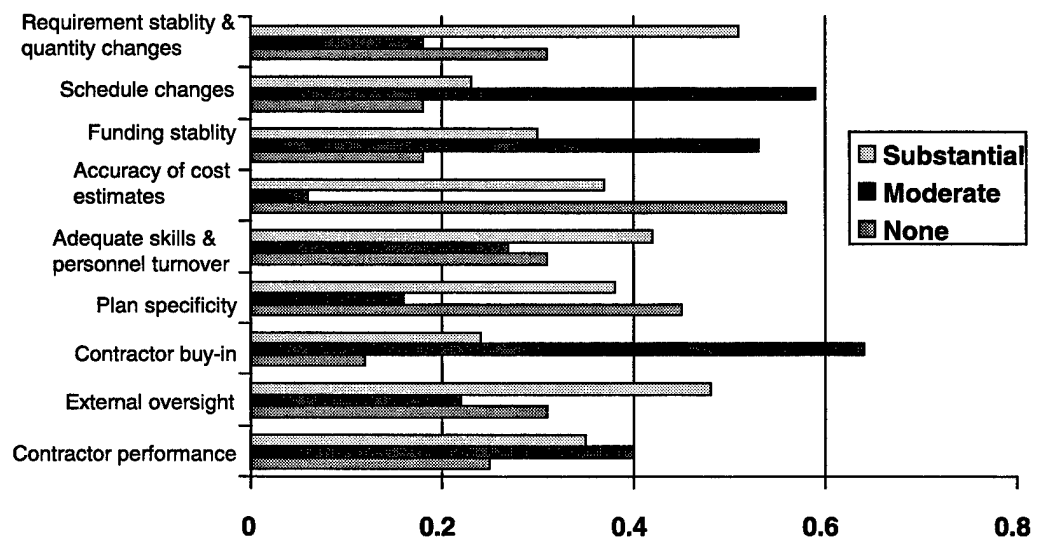
According to the survey responses, the program office has the least control over
funding stability, *external oversight*, and *contractor buy-in*. The large degree of
perceived moderate/substantial control over *requirement stability/quantity
changes* and *schedule changes* contradicted interview findings. The survey re-
sponses may reflect the program office's ability to do some cost, schedule, and

performance tradeoffs under the cost as an independent variable (CAIV) philosophy.

Significantly, 68 percent of the respondents believed that external factors can prevent teams from accomplishing goals, and 81 percent felt that external factors have a large influence on achieving cost, schedule, and performance goals.

SUMMARY

The survey provided empirical evidence to support interview findings that rewards have a large potential to influence the degree to which programs are successful, and that an incentives program linked to a credible performance measurement system can provide an effective tool for bringing about positive change in the acquisition program environment. The survey also indicated that both civilians and military place a high value on monetary awards and that they believe that current performance management systems lack credibility, that team performance is managed less effectively than individual performance, and that external influences have a large impact on program success.

The evidence collected to date through program office interviews, the enhanced incentives survey, and research on industry practices supports the recommendation to proceed with a test. Before monetary or other extrinsic awards are made, however, it is important to ensure that

- ◆ a credible team-based performance measurement system to link incentives to performance results has been established;

- ◆ all team members are eligible to participate, including civilians, military members, and SETA contractors;

- ◆ either cash awards or savings bonds are available to all team members; and

- ◆ rewards are equitable.

Annex 1 is a copy of the survey instrument, while Annex 2 tabulates the survey results in detail.

Annex 1
Acquisition Workforce Enhanced Incentives Survey

RCS: DD-A&T(OT)2029
EXPDT: 21 Aug 98

Acquisition Workforce Enhanced Incentives Survey

The Under Secretary of Defense for Acquisition and Technology is formulating a plan to test an enhanced system of incentives for the acquisition workforce. This survey is being conducted to involve key stakeholders in the design of the new reward system.

The results of this survey will be used to help construct the test to determine if workforce incentives can contribute to acquisition process success with regard to cost, schedule, and performance goals.

Please base your answers on your current (or most recent) acquisition program management office experience. If you wish to comment on any aspect of this program or survey, or qualify your answers to any question, please use the comments section at the end of this survey.

Thank you for your help.

PRIVACY NOTICE

Authority: 10 U.S.C. 136

Principal Purpose:
Information collected in this survey will assist in formulating test concepts and features to determine if workforce incentives can contribute to acquisition process success with regard to cost, schedule, and performance goals.

Disclosure:
Voluntary. Failure to respond will not result in any penalty to the respondent. Maximum participation is encouraged however, so that the data will be complete and representative. Your survey will be used only by persons engaged in, and for the purposes of, the survey. Only group statistics will be reported.

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A-1-3

Rewards and Recognition

The following section addresses current reward and recognition systems and asks your preference about the characteristics of a new system. Please base your answers on your current (or most recent) acquisition program management office experience.

Q-1 To what extent do you agree or disagree with the following statements concerning rewards and recognition?

Circle the number of your answer for each statement.

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Current System:					
Rewards and recognition have a large influence on behavior	1	2	3	4	5
The current performance appraisal system is credible and appropriate to determine reward distributions	1	2	3	4	5
In my view, award fee payments to the prime contractor are disruptive in the IPT environment	1	2	3	4	5
New System:					
Rewards and recognition have a large potential to influence the success of the acquisition process	1	2	3	4	5
I would prefer monetary awards over non-monetary awards	1	2	3	4	5
If monetary awards are given based on team performance, all team members (high and low performers) should receive the same amount	1	2	3	4	5
If awards are given based on team performance, an inequity results if military or contractor (SETA) team members are excluded from cash awards	1	2	3	4	5
If awards are given based on team performance, all team members should be rewarded equitably	1	2	3	4	5

2

Q-2 Of what value is each of the following rewards to you personally?

Circle the number of your answer for each example.

Reward	No Value	Little Value	Moderate Value	Large Value	Significant Value
Informal (non-ceremonial) recognition by peers, supervisors, DoD leaders	1	2	3	4	5
Formal (ceremonial) recognition by peers supervisors, DoD leaders	1	2	3	4	5
Outstanding performance rating	1	2	3	4	5
Increase in base pay	1	2	3	4	5
Paid time off	1	2	3	4	5
Education and training opportunities	1	2	3	4	5
Cash award (>$1000)	1	2	3	4	5
U.S. Savings Bonds (>$1000)	1	2	3	4	5
Productivity upgrades (facility, computers, software, etc.)	1	2	3	4	5
Assignment of administrative support	1	2	3	4	5
Tuition refunds for college courses	1	2	3	4	5
Follow-on assignment preference	1	2	3	4	5
Assignment of high-status tasks within current office	1	2	3	4	5
More flexibility concerning work hours and place (e.g. from home)	1	2	3	4	5
Gift certificates for sporting events, dinner, theater	1	2	3	4	5
More influence in goal setting and decision making	1	2	3	4	5
Unused leave/vacation time sell-back	1	2	3	4	5
Other (Specify): _____	1	2	3	4	5

Q-3 Please rank order the three awards that you would personally value most from the list below (specify 'Other' if your choice does not appear).

Circle #1 for your first choice, #2 for your second choice, and #3 for your third choice (Circle only three).

Award	Rank		
Informal (non-ceremonial) recognition by peers, supervisors, DoD leaders	1	2	3
Formal (ceremonial) recognition by peers supervisors, DoD leaders	1	2	3
Outstanding performance rating	1	2	3
Increase in base pay	1	2	3
Paid time off	1	2	3
Education and training opportunities	1	2	3
Cash award (>$1000)	1	2	3
U.S. Savings Bonds (>$1000)	1	2	3
Productivity upgrades (facility, computers, software, etc.)	1	2	3
Assignment of administrative support	1	2	3
Tuition refunds for college courses	1	2	3
Follow-on assignment preference	1	2	3
Assignment of high-status tasks within current office	1	2	3
More flexibility concerning work hours and place (e.g. from home)	1	2	3
Gift certificates for sporting events, dinner, theater	1	2	3
More influence in goal setting and decision making	1	2	3
Unused leave/vacation time sell-back	1	2	3
Other (Specify): _____	1	2	3

Q-4 In your opinion, is the reward more appropriate for Teams or Individuals? Circle 'Both' if you feel that the reward is appropriate for Teams *and* Individuals.

Circle the number of your answer for each example (Please circle only one answer for each reward).

Reward	Teams	Individuals	Both
Informal (non-ceremonial) recognition by peers, supervisors, DoD leaders	1	2	3
Formal (ceremonial) recognition by peers supervisors, DoD leaders	1	2	3
Paid time off	1	2	3
Education and training opportunities	1	2	3
Cash award (>$1000)	1	2	3
U.S. Savings Bonds (>$1000)	1	2	3
Productivity upgrades (facility, computers, software, etc.)	1	2	3
Assignment of administrative support	1	2	3
Tuition refunds for college courses	1	2	3
Assignment of high-status tasks within current office	1	2	3
More flexibility concerning work hours and place (e.g. from home)	1	2	3
Gift certificates for sporting events, dinner, theater	1	2	3
More influence in goal setting and decision making	1	2	3
Other (Specify): _____	1	2	3

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A-1-7

Individual and Team Performance

Q-5 To what extent do you agree or disagree with the following statements concerning performance management practices? Please base your answers on your current (or most recent) experience in an acquisition program management office.

Individual Performance

Circle the number of your answer for each statement.

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Organizational strategy and visions are clearly communicated	1	2	3	4	5
Individual performance objectives are clearly communicated	1	2	3	4	5
Performance appraisals are a fair and accurate reflection of individual performance	1	2	3	4	5
Performance appraisals take into account the most important aspects of the job	1	2	3	4	5
The current appraisal systems drive performance and motivate employees to perform well	1	2	3	4	5
Individual performance directly impacts the team	1	2	3	4	5
Individual performance directly contributes to program success	1	2	3	4	5
Individual performance objectives are aligned with team goals and objectives	1	2	3	4	5

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A-1-8

Q-5 (continued) To what extent do you agree or disagree with the following statements concerning performance management practices?

Team Performance

Circle the number of your answer for each statement.

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Team performance is more important than individual performance in terms of influencing program success	1	2	3	4	5
Organizational strategy and visions are clearly communicated to the team	1	2	3	4	5
Team goals and objectives are linked to organizational strategy	1	2	3	4	5
Team goals and objectives are clearly defined and communicated	1	2	3	4	5
Team performance is measured against clearly defined goals and objectives	1	2	3	4	5
Metrics used to measure team performance are fair and objective	1	2	3	4	5
Metrics used to measure team performance reflect the critical aspects of the program	1	2	3	4	5
Team performance measures drive performance and motivate the team to perform well	1	2	3	4	5

Program Success Measures

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
The Acquisition Program Baseline (APB) is a good basis for measuring acquisition process success	1	2	3	4	5
Deviations from the APB are largely due to factors beyond the control of the program management team	1	2	3	4	5

Critical Processes

Q-6 To what extent does each process impact acquisition process success in terms of cost, schedule, and technical performance goals?

Circle the number of your answer for each process.

Process	Not at all	Small Extent	Moderate Extent	Large Extent	Significant Extent
Develop product definition statements	1	2	3	4	5
Generate schedule, budget, and performance specifications	1	2	3	4	5
Build procurement plans	1	2	3	4	5
Cost/performance tradeoffs	1	2	3	4	5
Determine acquisition strategy	1	2	3	4	5
Progress/design reviews	1	2	3	4	5
Risk assessment	1	2	3	4	5
Determine contract deliverables	1	2	3	4	5
Secure funding	1	2	3	4	5
Stabilize resources	1	2	3	4	5
Source selection	1	2	3	4	5
Contract negotiations	1	2	3	4	5
Define and implement contractor award fee program	1	2	3	4	5
Test and evaluation	1	2	3	4	5
Technical interchange meetings	1	2	3	4	5
Timely and accurate reporting	1	2	3	4	5
Customer satisfaction	1	2	3	4	5
Other (Specify): _____	1	2	3	4	5

Q-7 Which program team, government or prime contractor, has a greater impact on the successful outcome of these processes? Indicate 'Both' if you feel that both teams equally affect the successful outcome of the process.

Circle the number of your answer for each process.

Process	Government	Prime Contractor	Both
Develop product definition statements	1	2	3
Generate schedule, budget, and performance specifications	1	2	3
Build procurement plans	1	2	3
Cost/performance tradeoffs	1	2	3
Determine acquisition strategy	1	2	3
Progress/design reviews	1	2	3
Risk assessment	1	2	3
Secure funding	1	2	3
Stabilize resources	1	2	3
Source selection	1	2	3
Contract negotiations	1	2	3
Define and implement contractor award fee program	1	2	3
Test and evaluation	1	2	3
Technical interchange meetings	1	2	3
Timely and accurate reporting	1	2	3
Customer satisfaction	1	2	3
Other (Specify): _____	1	2	3

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A-1-11

An incentive system should reward performance based on factors that are within program office control and not be based on factors that are external to the program office. Below is a potential list of factors that can influence the success of the acquisition process.

Q-8 How much control does the Program Management Office have over these factors? Please include additional factors you consider important. Use the comment section to elaborate.

Circle the number of your answer for each example.

Factors	None at All	Little Control	Moderate Control	Substantial Control	Full Control
Requirement stability/quantity changes	1	2	3	4	5
Program schedule changes	1	2	3	4	5
Funding stability	1	2	3	4	5
Accuracy of cost estimates	1	2	3	4	5
Adequate skills/personnel turnover	1	2	3	4	5
Plan specificity	1	2	3	4	5
Contractor bidding strategy (e.g. low bid to buy-in)	1	2	3	4	5
External oversight (e.g. audits)	1	2	3	4	5
Contractor performance	1	2	3	4	5
Other (Specify): _____	1	2	3	4	5
Other (Specify): _____	1	2	3	4	5

Q-9 To what extent do the above factors influence cost, schedule, and performance goals?
[] not at all
[] small extent
[] moderate extent
[] large extent
[] significant extent

Q-10 To what extent do the above factors prevent the team from successfully accomplishing team objectives?
[] not at all
[] small extent
[] moderate extent
[] large extent
[] significant extent

Background

Q-11 Are you:
[] Military
[] Government Civilian
[] Support Contractor (SETA)

Q-12 How many years experience do you have in a Program Office?
[] none
[] less than 4
[] 4 to less than 8
[] 8 to less than 12
[] 12 or more

Q-13 What is your Service Department? (contractors may skip questions 14 through 17)
[] Army
[] Navy
[] Marine Corps
[] Air Force
[] Defense Agency

Q-14 What is your current grade?
[] GS 9-12
[] GS 13-14
[] GS 15
[] O3 or below
[] O4-O5
[] O6 and above

Q-15 How many years experience do you have in Acquisition?
[] none
[] less than 4
[] 4 to less than 8
[] 8 to less than 12
[] 12 or more

Q-16 How long ago was your last program office assignment?
[] have not had one
[] within the last 3 years (or current)
[] more than 4 but less than 8 years ago
[] more than 8 years ago

Q-17 Are you a member of the Acquisition Corps?
[] Yes
[] No

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A-1-13

Comments

Please use this space (and additional sheets as necessary) to elaborate on your answers to any of the questions or to recommend specific strategies that you think are important in the reward and recognition of acquisition professionals.

Your contribution to this survey is greatly appreciated. If you would like a summary of the results, please contact us via any of the addresses below and we will see that you receive the summary.

Annex 2
Detailed Survey Results

This annex to Appendix A provides detailed data regarding survey participant demographics, response distributions for each question, statistical differences by military service, military versus civilian personnel, and program management team (PMT) members versus acquisition students.

DEMOGRAPHICS

Figure A-2-1. Respondent Demographics (by program or school)
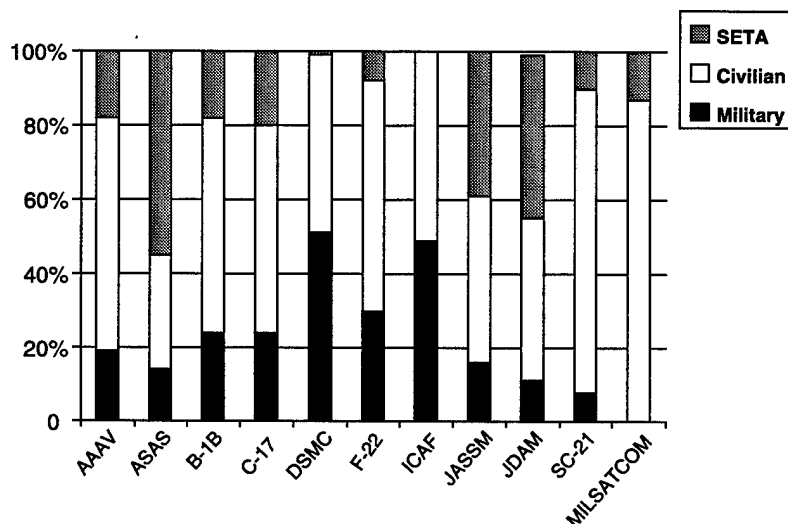
Table A-2-1. Respondents by Personnel Type

	Military	Civilian	SETA	Total
PMT Members	116	320	115	551
	(21 percent of PMT)	(58 percent of PMT)	(21 percent of PMT)	(67 percent of Total)
Students	136	133	1	270
	(50 percent of Students)	(49 percent of Students)	(0.4 percent of Students	(33 percent of Total)
Total	252	453	116	821
	(31 percent of Total)	(55 percent of Total)	(14 percent of Total)	

REWARDS AND RECOGNITION

Figure A-2-2. Respondents' Views of Rewards and Recognition (graphic)
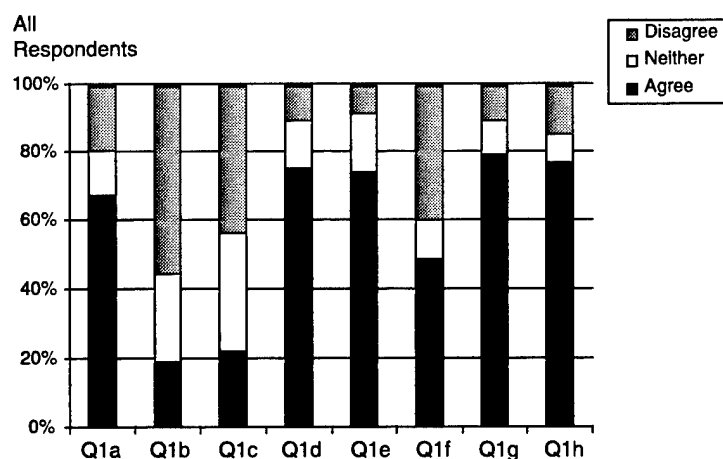
Note: See Table A-2-2.

Table A-2-2. Respondents' Views of Rewards and Recognition (tabular)

Question	Percent agree	Percent disagree	Percent neither
Q1a. Rewards and recognition have a large influence on behavior	67	19	14
Q1b. The current appraisal system is credible and appropriate to determine reward distributions	19	55	26
Q1c. In my view, award fee payments to the prime contractor are disruptive in the Integrated Product Team environment	22	43	35
Q1d. Rewards and recognition have a large potential to influence success	74	10	15
Q1e. I would prefer monetary over non-monetary awards	74	8	18
Q1f. If monetary awards are based on team performance, all team members (high and low performers) should receive the same amount	48	39	12
Q1g. If awards are based on team performance, an inequity results if military of SETA contract team members are excluded from cash awards	79	10	11
Q1h. If awards are based on team performance, all team members should be rewarded equitably	76	14	9

Figure A-2-3. Differences by Service

% of Respondents
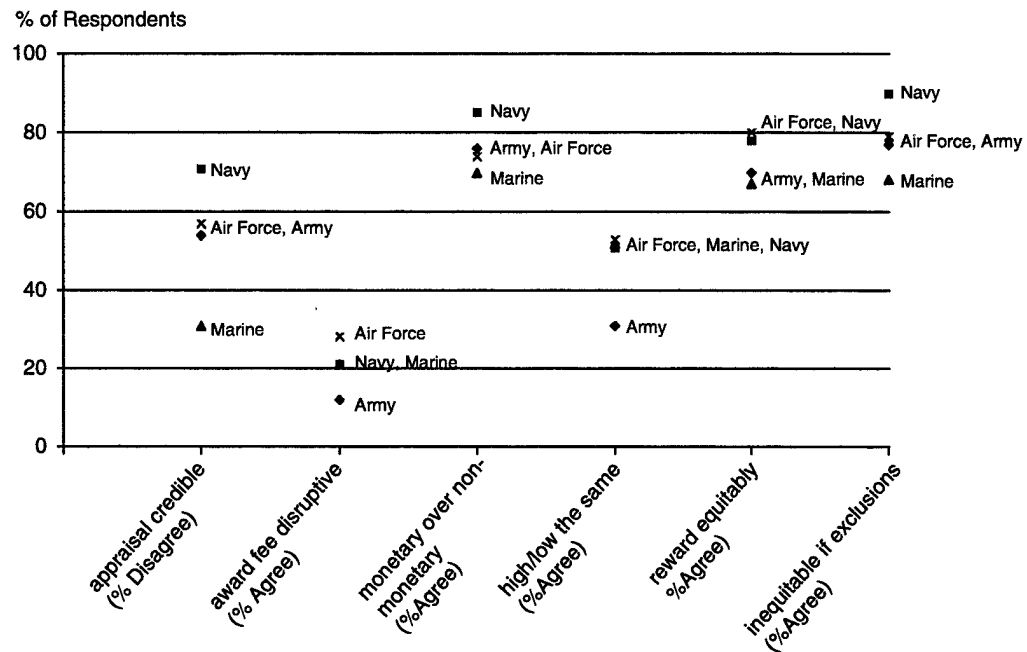
Table A-2-3. Significance Tests: Rewards and Recognition

Question	Mil v. Civ	PMT v. Students
Rewards & recognition have large influence	No difference	No difference
Appraisal credible	Mil less likely to disagree (54% v. 62%)	PMT less likely to disagree (50% v. 67%)
Award fee disruptive	Civ less likely to disagree (40% v. 50%)	PMT more likely to agree (25% v. 17%)
Rewards & recognition have large potential	No difference	No difference
Favor monetary over nonmonetary	Civ more likely to agree (78% v. 66%)	No difference
High/low performers rewarded the same	No difference	PMT more likely to agree (51% v. 44%)
Rewards should be equitable	No difference	PMT less likely to disagree (12% v. 19%)
Inequitable if exclusions	Mil more likely to agree (87% v. 73%)	PMT less likely to agree (76% v. 86%)

A-2-3

Figure A-2-4. Rewards Ranked and Clustered by Decreasing Value—Civilian

GS 9-12	GS 13-14	GS 15

Base Pay Increase
Cash Award
Outstanding Rating

Base Pay Increase
Cash Award
Outstanding Rating

Base Pay Increase
Outstanding Rating
Cash Award

Paid Time Off
Flex Work Hours/Place
Savings Bonds
Education & Training
Assignment Preference

Paid Time Off
Savings Bonds
Flex Work Hours/Place
Education & Training
Assignment Preference

Assignment Preference
Influence in Goal Setting
Education & Training
Flex Work Hours/Place   Savings Bonds
Unused Leave Sell Back Productivity Upgrades
High Status Tasks
Informal Recognition   Tuition Refunds
Formal Recognition
Paid Time Off

Influence in Goal Setting
Unused Leave Sell Back
High Status Tasks
Tuition Refunds
Productivity Upgrades
Informal Recognition
Formal Recognition

Influence in Goal Setting
High Status Tasks
Informal Recognition
Formal Recognition
Unused Leave Sell Back
Tuition Refunds
Productivity Upgrades

Admin Support

Admin Support
Gift Certificates

Admin Support
Gift Certificates

Gift Certificates

Figure A-2-5. Rewards Ranked and Clustered by Decreasing Value—Military

Lt-Capt	Maj-LtCol	Colonel

Assignment Preference
Outstanding Rating
Cash Award
Base Pay Increase

Base Pay Increase
Outstanding Rating
Cash Award
Assignment Preference

Base Pay Increase
Cash Award
Outstanding Rating

Paid Time Off
Savings Bonds
Education & Training
Informal Recognition
High Status Tasks

Savings Bonds
Education & Training
Paid Time Off
Influence in Goal Setting
High Status Tasks
Flex Work Hours/Place
Informal Recognition
Formal Recognition

Influence in Goal Setting
Informal Recognition
Paid Time Off
Education & Training
Savings Bonds
Productivity Upgrades
Formal Recognition

Flex Work Hours/Place
Influence in Goal Setting
Formal Recognition
Tuition Refunds
Productivity Upgrades

Unused Leave Sell Back
Tuition Refunds
Productivity Upgrades

Flex Work Hours/Place
Assignment Preference
High Status Tasks
Unused Leave Sell Back
Admin Support

Admin Support
Unused Leave Sell Back
Gift Certificates

Admin Support
Gift Certificates

Tuition Refunds
Gift Certificates

PERFORMANCE MANAGEMENT

Figure A-2-6. Respondents' Views of Individual Performance Management

Note: See Table A-2-4.

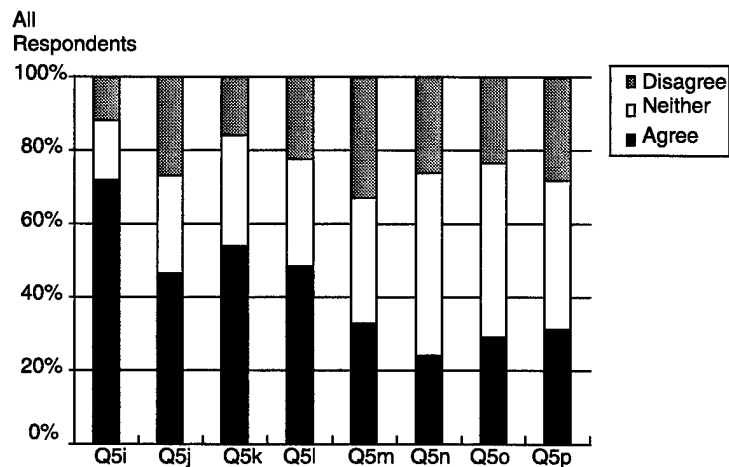*Table A-2-4. Respondents' Views of Individual Performance Management*

Question	Percent agree	Percent disagree	percent neither
Q5a. Organizational strategy and visions are clearly communicated	53	27	19
Q5b. Individual performance objectives are clearly communicated	46	30	24
Q5c. Performance appraisals are a fair and accurate reflection of individual performance	35	40	25
Q5d. Performance appraisals take into account the most important aspects of the job	43	30	27
Q5e. The current appraisal systems drive performance and motivate employees to perform well	18	56	26
Q5f. Individual performance directly impacts the team	91	3	5
Q5g. Individual performance directly contributes to program success	90	3	7
Q5h. Individual performance objectives are aligned with team goals and objectives	42	22	36

Table A-2-5. Significance Tests: Individual Performance Management

Question	Mil v. Civ	PMT v. Students
Org strategy clearly communicated	No difference	PMT less likely to disagree (24% v. 34%)
Indiv performance object clearly comm	No difference	PMT less likely to disagree (26% v. 38%)
Appraisals fair & accurate	Civ more likely to disagree (48% v. 32%)	PMT less likely to disagree (37% v. 47%)
Account for most important aspect of job	Civ more likely to disagree (35% v. 24%)	PMT less likely to disagree (27% v. 36%)
Current system drives perform-ance & motivate	Civ more likely to disagree (62% v. 48%)	PMT more likely to agree (21% v. 17%)
Individual performance impacts the team	No difference	No difference
Individual performance contributes to program success	No difference	No difference
Individual perf objectives align with team	No difference	PMT less likely to disagree (14% v. 28%)

Figure A-2-7. Respondents' Views of Team Performance Management

Note: See Table A-2-6.

A-2-7

Table A-2-6. Respondents' Views of Team Performance Management

Question	Percent agree	Percent disagree	Percent neither
Q5i. Team performance is more important than individual performance in influencing program success	72	12	16
Q5j. Organizational strategy and visions are clearly communicated to the team	47	27	27
Q5k. Team goals and objectives are linked to organizational strategy	54	16	30
Q5l. Team goals and objectives are clearly defined and communicated	48	22	29
Q5m. Team performance is measured against clearly defined goals and objectives	33	33	34
Q5n. Metrics used to measure team performance are fair and objective	24	26	50
Q5o. Metrics used to measure team performance reflect the critical aspects of the program	29	23	47
Q5p. Team performance measures drive performance and motivate the team to perform well	31	28	40

Table A-2-7. Significance Tests: Team Performance

Question	Mil v. Civ	PMT v. Students
Team performance more important	Mil more likely to agree (83% v. 66%)	No difference
Organizational strategy communicated to team	No difference	PMT less likely to disagree (24% v. 32%)
Team goals linked to strategy	Mil more likely to agree (62% v. 50%)	PMT less likely to disagree (14% v. 22%)
Team goals communicated	No difference	No difference
Team performance measured against goals	No difference	PMT less likely to disagree (29% v. 40%)
Metrics fair and objective	No difference	PMT less likely to disagree (22% v. 34%)
Metrics reflect critical aspects of program	No difference	PMT less likely to disagree (19% v. 32%)
Team performance measures drive performance	No difference	PMT less likely to disagree (27% v. 37%)
APB is good basis to measure success	Mil more likely to agree (43% v. 34%)	Students more likely to agree (45% v. 32%)
APB deviations are beyond control	No difference	Students more likely to disagree (21% v. 12%)

Appendix B
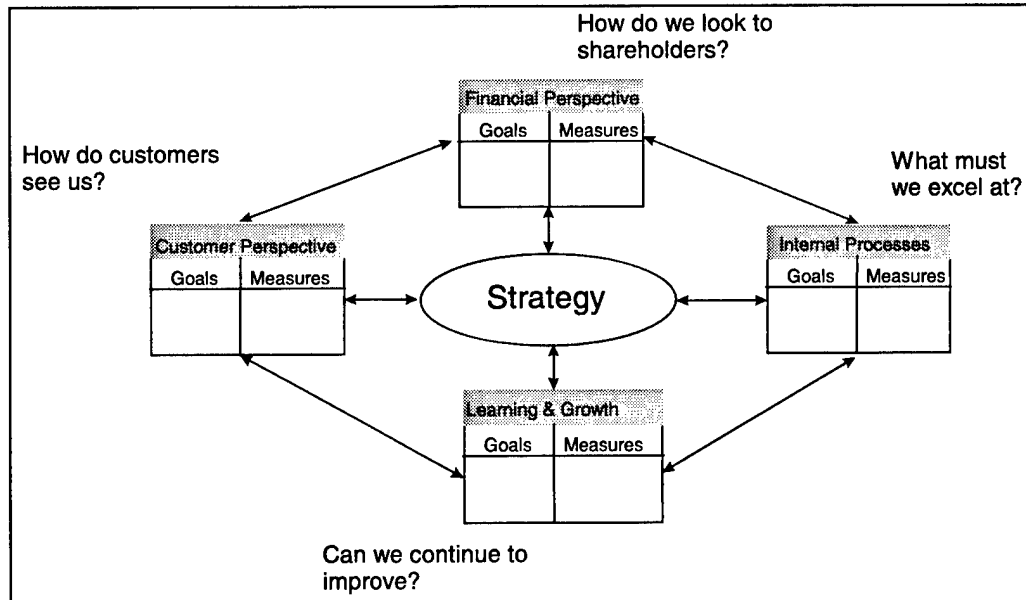# The Balanced Scorecard

OVERVIEW

As managers and academics have tried to remedy the inadequacies of current performance management systems, some have focused on making financial measures more relevant.[1] Others have said, "Forget the financial measures. Improve operational measures like cycle time and defect rates; the financial results will follow." But managers should not have to choose between financial and operational measures. Financial measures tell the results of actions already taken, while operational measures of customer satisfaction, internal processes, and the organization's innovation and improvement activities are the drivers of future financial performance. Senior leadership cannot rely on one set of measures to the exclusion of others, and no single measure can provide a clear performance target or focus attention on all the critical areas of the business/program. Managers need a balanced presentation of both financial and operational measures.

The Balanced Scorecard, as shown in Figure B-1, is a performance management system that translates mission and strategy into objectives and measures. It allows managers to look at their business from four important perspectives, and it provides answers to four basic questions:

◆ How do customers see us (customer perspective)?

◆ How do we look to shareholders (financial perspective)?

◆ What must we excel at (internal perspective)?

◆ Can we continue to improve and create value (innovation, learning, and growth perspective)?

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[1] "The Balanced Scorecard—Measures That Drive Performance," Robert S. Kaplan and David P. Norton, *Harvard Business Review*, January-February 1992.

Figure B-1. The Balanced Scorecard

How do we look to
shareholders?

Financial Perspective

Goals	Measures

How do customers
see us?

What must
we excel at?

Customer Perspective

Goals	Measures

Strategy

Internal Processes

Goals	Measures

Learning & Growth

Goals	Measures

Can we continue to
improve?

The scorecard provides a framework—a language—for communicating mission and strategy; it uses measurement to inform employees about the drivers of current and future success. By clearly defining the outcomes the organization desires and the drivers of those outcomes, senior managers can channel the energies, abilities, and specific knowledge of people throughout the organization toward achieving the long-term goals.[2]

While giving senior managers information from the four perspectives, the balanced scorecard minimizes information overload by limiting the number of measures used. Organizations rarely suffer from having too few measures. More commonly, new measures are added whenever an external priority changes or an employee or consultant make a worthwhile suggestion. More than one program team member told us, "too many metrics, too few measures of value." The balanced scorecard forces managers to focus on the handful of measures that are the most critical.

The scorecard brings together, in a single management report, many of the seemingly disparate elements of an organization's competitive agenda: shortening response time, managing for the long term, improving quality, emphasizing and rewarding teamwork, being customer oriented, and reducing product launch times. The scorecard also guards against sub-optimization. By forcing senior managers to consider all the operational measures together, the balanced scorecard lets them see whether improvement in one area may have been achieved at the expense of another.

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[2] *The Balanced Scorecard, Translating Strategy into Action*, Robert S. Kaplan and David P. Norton, Harvard Business School Press, 1996.

A STRATEGIC MANAGEMENT MODEL

The balanced scorecard is more than a tactical or operational measurement exercise. Innovative companies are using the scorecard as a strategic management system, to manage strategy for the long term and motivate breakthrough improvements in such critical areas as product, process, customer, and market development.

The scorecard has its greatest impact when it is used to drive organizational change.[3] Senior executives establish targets for the scorecard measures that, if achieved, will transform the company. Rather than just applying fundamental process redesign to any local process where gains might be easily obtained, managerial efforts are directed to improving and reengineering processes that are critical for the organization's strategic success. The target-setting management process enables the organization to

◆ quantify the long-term outcomes it wishes to achieve,

◆ identify mechanisms and provide resources for achieving those outcomes, and

◆ establish short-term milestones for financial and nonfinancial measures on the scorecard.

Strategy

The scorecard process starts with a senior executive management team working together to translate strategy into specific strategic objectives. The team develops an initial scorecard with fairly narrow objectives to gain clarification, consensus, and focus on the strategy, and to communicate that strategy throughout the organization. The team then uses the measurement focus of the scorecard to[4]

◆ align departmental and personal goals with strategy,

◆ link strategic objectives to long-term targets and annual budgets,

◆ plan, set targets, and align strategic initiatives,

◆ perform periodic and systematic strategic reviews, and

◆ obtain feedback to learn about and improve strategy.

A strategic perspective provides criteria for deciding the issues or, at least, focuses the debate on what the relevant criteria are. Difficult tactical issues are often more effectively resolved when the strategic perspective is clear. A strategic approach

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[3] Ibid., p. 14.
[4] Ibid., p. 19.

enlarges the field of view, so that tactical questions seldom stand alone. They are related to other questions that eventually lead to some fundamental issue regarding the organization's ability to achieve its desired outcomes. The most effective organizations over the long term devote time and attention to resolving tactical issues and questions within the organization's broader strategic context.

Customer Perspective: How Do Customers See Us?

A common objective today is delivering value to the customer. How an organization or program is performing from the customers' perspective has become a priority for top leadership. The balanced scorecard requires managers to translate their general mission statement on customer service into specific measures that reflect the factors that really matter to customers.

Customers' concerns tend to fall into four categories: time, quality, performance and service, and cost. To put the scorecard to work, goals should be articulated for time, quality, and performance and service and then translated into specific measures. For example, lead-time measures the time required to meet the customers' needs. For existing products and services, lead-time can be measured from the time an order is received to the time the product or service is delivered to the customer. For new products, lead-time represents the time to market, or how long it takes to bring a new product from the product definition stage to the start of field testing. Quality measures the defect level of incoming products as perceived and measured by the customer. Quality could also measure on-time delivery, a function of the accuracy of delivery forecasts. The combination of performance and service measures how products or services contribute to creating value for customers.

In addition to measures of time, quality, and performance and service, it is of course important to remain sensitive to cost. Price is only one component of the cost incurred when dealing with suppliers. Other supplier-driven costs range from ordering, scheduling delivery, and paying for materials, to receiving, inspecting, handling, and storing the materials. They also reflect the scrap, rework, and obsolescence caused by the materials, as well as schedule disruptions (expediting and value of lost output) from incorrect deliveries. An excellent supplier may charge a higher unit price for products/materials than other vendors but nonetheless be a lower-cost supplier because it can deliver defect-free products in exactly the right quantities at exactly the right time directly to the production process and can minimize the administrative hassles of ordering, invoicing, and paying for materials through electronic data interchange.

Internal Business Perspective: What Must We Excel At?

Customer-based measures are important, but they must be translated into measures of what an organization must do internally to meet its customers' expectations. After all, excellent customer performance derives from processes, decisions,

and actions occurring throughout an organization. Managers need to focus on those critical internal operations that enable them to satisfy customer needs and requirements.

Traditional performance measurement systems—even those that use mostly non-financial indicators—focus on improving the cost, quality, and cycle times of existing processes. The balanced scorecard highlights those processes that are most critical for achieving breakthrough performance for customers and stakeholders. Often this identification reveals entirely new internal processes that the organization must excel at for its strategy to be successful.

Internal measures should attempt to capture an organization's core competencies—the critical skills and technologies needed to ensure continued success. To achieve goals, managers must devise measures that are influenced by employees' actions. Since much of the action takes place at the department/Integrated Product Team level, managers need to cascade objectives to lower levels. That way, the measures link top management's judgment about key internal processes and competencies to the actions taken by individuals that affect strategic objectives. This linkage ensures that employees at lower levels in the organization have clear targets for actions, decisions, and improvement activities that will contribute to the overall mission.

Learning and Growth (Innovation) Perspective: Can We Continue to Improve and Create Value?

A major issue in determining innovation and learning is the organization members' understanding of "what we are here to do," and whether learning, improvement, and adoption of more effective practices is part of the understanding of the requirements of their role. An organizations' ability to innovate, improve, and learn ties directly to its value.

One company has validated the cause-and-effect relationships in its balanced scorecard by measuring the strength of the linkages among measures in the perspectives.[5] The company found significant correlations between employees' morale (a measure in the learning-and-growth perspective) and customer satisfaction (an important customer perspective measure). Customer satisfaction, in turn, was correlated with faster payment of invoices, a relationship that led to a substantial reduction in accounts receivable and hence a higher return on capital employed. Organizations have also found correlations between employees' morale and the number of suggestions made by employees (both learning-and-growth measures), as well as between an increased number of suggestions and lower rework (an internal business process measure). Evidence of such strong correlations helps to confirm the organization's business strategy. If expected correlations are not

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[5] "The Balanced Scorecard—Measures That Drive Performance," Robert S. Kaplan and David P. Norton, *Harvard Business Review*, January-February 1992.

found over time, that should indicate to senior management that the theory underlying the organization's strategy may not be working as anticipated.

Financial Perspective: How Do We Look to Shareholders?

Is the financial perspective even relevant for driving the long-term performance of a DoD organization? Several critics of industry performance measurement systems have advocated scrapping financial measures entirely for measuring business unit performance, arguing that in today's technologically and customer-driven global competition, financial measures are poor guidelines for success. Rather than managing the bottom line to facilitate short-term savings, critics argue for investing in the long term (customers, employees, systems). The most commonly used results measures in product development are schedule and cost. But the fact that a program is six months late and $2 million over budget doesn't tell anyone what went wrong or what to do differently.[6]

Financial objectives and measures must define the financial performance expected from the strategy. The hard truth is that if improved performance fails to be reflected in the bottom line, managers need to reexamine the basic assumptions of their strategy and mission. Performance measures are the glue that binds business strategy to operational behavior. Therefore, it is critical to effectively link the financial and strategic objectives to the operational cost drivers that can be managed at the functional or process level.[7]

SUMMARY

An organization's measurement system strongly affects the behavior of people both inside and outside the organization.

Performance measures should be used to articulate the strategy of the business, to communicate the strategy of the business, and to help align individual, organizational, and cross-departmental initiatives to achieve a common goal. The four perspectives of the scorecard permit a balance between short and long term objectives, between outcomes desired and the performance drivers of those outcomes, and between hard objective measures and softer, more subjective measures. While the multiplicity of measures on a scorecard may seem confusing, properly constructed scorecards have a unity of purpose, since all the measures are directed toward achieving an integrated strategy.[8]

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[6] "How the Right Measures Help Teams Excel," Christopher Meyer, *Harvard Business Review*, May-June 1994.

[7] Gary Hudson, Manager of Advanced Cost Management, AlliedSignal, Inc., 1997.

[8] *The Balanced Scorecard, Translating Strategy into Action*, Robert S. Kaplan and David P. Norton, Harvard Business School Press, 1996.

Appendix C
Abbreviations

ACA	American Compensation Association
ACAT I	Acquisition Category I
ACV	average cost variance
ANOVA	analysis of variance
APB	Acquisition Program Baseline
APQC	American Productivity and Quality Center
ASD(C3I)	Assistant Secretary of Defense for Command, Control, Communications, and Intelligence
ASV	average schedule variance
CAE	Component Acquisition Executive
CAIV	cost as an independent variable
CEO	Chief Executive Officer
COTS	commercial-off-the-shelf
CV	cost variance
DoD	Department of Defense
DSCPD	Defense System Cost Performance Database
DUSD(AR)	Deputy Under Secretary of Defense for Acquisition Reform
EMD	engineering, manufacturing, and development
FASA	Federal Acquisition Streamlining Act
GPRA	Government Performance and Results Act
IBC	International Benchmarking Clearinghouse
IMPROSHARE	Improved Productivity through Sharing
IPT	Integrated Product Team
IT	information technology
LMI	Logistics Management Institute
MAIS	major automated information system
MILCON	construction

O&M	operations and maintenance
OPM	Office of Personnel Management
P&C	Property and Casualty
PBOs	performance-based organizations
PEO	Program Executive Officer
PM	Program Manager
PMT	program management team
QRMC	Quadrennial Review of Military Compensation
RDT&E	research, development, test, and evaluation
SARs	Selected Acquisition Reports
SETA	science, engineering, technical, and administrative
SV	schedule variance
U.S.C.	United States Code
USD(A&T)	Under Secretary of Defense for Acquisition and Technology
USM&R	U.S. Marketing & Refining Division
VA	Veterans Affairs

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13. ABSTRACT (Maximum 200 words)

This report details the approach to and key elements of conducting pilot tests to provide enhanced incentives for Department of Defense (DoD) acquisition professionals on Acquisition Category I (ACAT I) program management teams. The objective of the tests is to determine whether these incentives can contribute to program success in terms of cost, schedule, and performance. Section 5001 (b) of the Federal Acquisition Streamlining Act (FASA) requires the Secretary of Defense to review the incentives and personnel actions available to DoD for encouraging excellence in the management of defense acquisition programs, and to provide a system of enhanced incentives to facilitate the achievement of cost, schedule, and performance goals. The system is intended to relate pay to performance and to provide for consideration (in personnel evaluations and promotion decisions) of the extent to which an individual's performance has contributed to achieving goals established for major defense acquisition programs. We recommend that 16 pilot programs participate in the test to determine whether enhanced incentives can have a positive impact on program success. This number is the minimum required for collecting enough data to detect statistical differences among the test programs. In stage one, all pilot programs should have successfully implemented the common performance measurement system—the Balanced Scorecard—to which incentives will be linked in stage two.

14. SUBJECT TERMS

incentives, pay-for-performance, balanced scorecard, performance management, compensation, rewards and recognition, monetary awards, acquisition workforce, goalsharing, gainsharing, cost variance, schedule variance, FASA, ANOVA

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